



Staff Report of the
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

**TOTAL MAXIMUM DAILY LOAD
FOR SALINITY AND BORON IN THE
LOWER SAN JOAQUIN RIVER**

APPENDICES A THROUGH G



January 2002

State of California
California Environmental Protection Agency

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METHODS AND DATA SOURCES

Extensive flow and water quality data were compiled from numerous sources and evaluated to determine the historical salt and boron loads originating from the LSJR sub-areas and the DMC. The core data used to determine sub-area loads consists of monthly flow and water quality data compiled for seven key monitoring stations along the LSJR and its major tributaries (Figure A-1). The data used to determine historical loads from the LSJR sub-areas is comprised of monthly flow (acre-feet), TDS concentrations (mg/L), and boron concentrations (mg/L) for water years 1977-1997 (Tables A11-A17). In general, the monthly flow data is the sum of the daily flows at each station. Table A-2 describes the sources of flow data used to calculate the historic sub-area loads.

The historic salt load for the LSJR upstream of Salt Slough, Grasslands, Merced River, Tuolumne River, and Stanislaus River Sub-areas was calculated using flow and water quality data for one or two key monitoring points located upstream of the sub-area confluence with the main stem of the LSJR. Loads calculated for the LSJR at Lander Avenue were used to represent the loads generated from the LSJR upstream of Salt Slough Sub-area. Loads from the Grasslands Sub-area are equal to the sum of the loads from Mud Slough (north) and Salt Slough, which are the two primary tributaries in the Grasslands Sub-area. Loads for the Merced River, Tuolumne River, and Stanislaus River Sub-areas were calculated using flow and water quality data from gaging stations upstream of these east-side tributary confluences with the LSJR (Table A-1).

Table A-1: Locations of Major Gaging Stations Used to Determine Sub-area Loads

Sub-area	Flow Monitoring Station Used to calculate Loads	Miles upstream of LSJR confluence
LSJR upstream of Salt Sl.	SJR Near Stevinson (Lander Ave.)	0
Grasslands	Mud Slough(north) near Gustine, Salt Slough @ Highway 165	9 6
Merced River	Merced River near Stevinson	5
Tuolumne River	Tuolumne River @ Modesto	17
Stanislaus River	Stanislaus River near Ripon	18

In some instances flow data from multiple sources was used because gaging stations were discontinued over time or data was missing. Once the historic record of flow data was established, salinity (TDS) and boron data was paired to flow data at each station. All water quality data from the closest site available was used when water quality data for a given site was not available at the same location as the respective flow gage (Figure A-1).

Salinity data

Water quality data was obtained from numerous sources in order construct a complete 21-year historical record. At some locations there was no data available for a given time span, so estimates were made based on the available data. Generally, salinity data was

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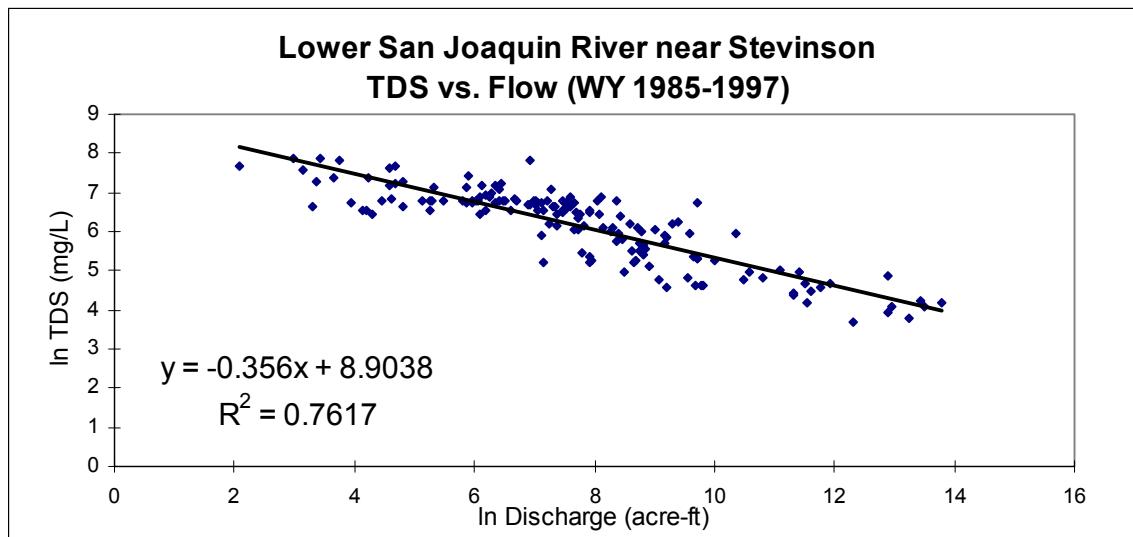
available as daily EC measurements. Daily EC values were converted to TDS (mg/L) using site specific EC to TDS conversion ratios that were calculated using paired EC and TDS data (Table A-2). Flow-weighted average monthly TDS data used for the LSJR at the Airport Way Bridge near Vernalis station was based on the daily record of EC.

Table A-2: TDS/EC Ratios for LSJR and Tributaries		
LOCATION	NUMBER OF SAMPLES	TDS/EC RATIO
SJR at Lander ¹	37	0.64
Salt Slough ²	44	0.68
Mud Slough ²	38	0.69
Merced River ¹	25	0.66
Tuolumne River ¹	32	0.67
Stanislaus River ¹	35	0.69
SJR near Vernalis ²	40	0.61

Data Sources: ¹Kratzer, 1987 ²Grober, 1998

Weekly Regional Board grab sample data for EC were used to develop a flow-weighted average monthly TDS record for the LSJR at Stevinson (Lander Ave) for water years 1985 to 1997. No grab sample data was available prior to water-year 1985, so monthly TDS for the LSJR at Stevinson was estimated for water years 1977 to 1984 using the available flow data. The natural log of the monthly discharge and TDS data were plotted and a linear regression was used to develop a correlation between discharge and TDS (Figure A-1). The regression equation was then used to estimate monthly TDS from monthly flow data for water-years 1977 through 1984.

Figure A-1: Lower San Joaquin River near Stevinson Flow VS. EC Regression for WY 85-97



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Mean monthly EC data for water years 1977 through 1984, for the Merced River (at Milliken), the Tuolumne River (at Tuolumne City), and the Stanislaus River (at Koetitz) were obtained from the San Joaquin River Input Output (SJARIO) model input files which are based on continuous EC readings from DWR water quality monitoring stations (Kratzer, 1987). Monthly flow-weighted averages of USGS daily EC data were used for the Merced River, the Tuolumne River, and the Stanislaus River for water-years 1985-1997. Site-specific linear regression analysis of flow and EC was used to fill in any data gaps. The natural log of the monthly discharge and TDS data was plotted and a linear regression was used to develop a correlation between discharge and TDS. The regression equations (Table A-3) were used to estimate monthly TDS from monthly flow data for months when no EC data was available. All TDS concentration data that was estimated using this method is indicated in italics in Tables A-11through A-17.

Table A-3: Site specific linear regression equations used to estimate monthly mean TDS for missing data

Site/Location	Regression Equation	R ²
Merced River	mean monthly TDS = -0.385 * Q _M + 8.4386	0.70
Tuolumne River	mean monthly TDS = -0.4164 * Q _M + 9.0859	0.58
Stanislaus River	mean monthly TDS = -0.2823 * Q _M + 7.2897	0.53

Q_M = total monthly flow

Flow and TDS data for Mud Slough near Gustine and Salt Slough near Stevenson for water years 1977-1984 was also obtained directly from SJARIO model input files. Flow and EC data collected between water years 1985 through 1995, for Salt Slough, Mud Slough, and the SJR at the Airport Way Bridge near Vernalis sites were obtained from a Regional Board Staff Report entitled *Loads of Salt Boron and Selenium in the Grassland Watershed and Lower San Joaquin River October 1985 to September 1995 Raw Data Supplemental Appendix* (Grober, 1998). Flow and EC data for water years 1986 and 1995, for Salt Slough near Stevenson, Mud Slough near Gustine, and the SJR at the Airport Way Bridge near Vernalis sites was obtained (as text files) from the USGS.

Boron data

Boron data for water years 1985 through 1997 for the SJR at Lander Avenue, Mud Slough, Salt Slough, and SJR at the Airport Way Bridge near Vernalis sites was based on data from the Regional Boards water quality data base, which is a compilation of grab sample data collected by the Regional Board. This data set represents over 650 discrete samples collected at these four sites between 1985 and 1997. Monthly averages of the grab sample data coupled with total monthly flow were used to determine monthly boron loads at each of the sites. Boron data for water years 1977-1985, were estimated using site-specific linear correlations of EC and Boron (Table A-3).

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Table A-3: EC/Boron Ratios for LSJR and Tributaries			
Site	Boron/EC Ratio	Number of Samples	R²
LSJR at Lander Avenue	0.0002	173	0.90
Mud Slough (North)at San Luis Drain	0.0008	72	0.70
Salt Slough at Lander Avenue	0.001	124	0.82
LSJR near Vernalis	0.0005	186	0.86

Limited boron data is available for the Merced, Tuolumne, and Stanislaus Rivers. This limited data, however, suggest that boron concentrations in the tributaries varies little over time. The boron data used to compute monthly loads for the Merced, Tuolumne and Stanislaus rivers was based on USGS water quality monitoring conducted between March 1985 and September 1988 (USGS, 1988, 1991). Available daily flow and boron values were sorted in a spreadsheet in descending order (by flow). The Microsoft Excel percentile function was used to determine the 75th percentile flow values for each river. In general, flow above the 75th percentile is considered to be above normal. The flow-weighted average boron concentration corresponding to flows at or above the 75th percentile (high flow conditions) was calculated for each river. Similarly the flow-weighted average boron concentration corresponding to flows less than the 75th percentile (low flow conditions) was calculated for each river. The mean of these flow-weighted averages was used as the estimated base boron concentration for low flow and high flow conditions. Using this method, the Merced, Tuolumne and Stanislaus Rivers were assigned a boron concentration 0.015 mg/L for months where the flows were above the 75th percentile flow value for the respective river. A boron concentration of 0.03 mg/L was used for months where the flow was less than the 75th percentile flow value.

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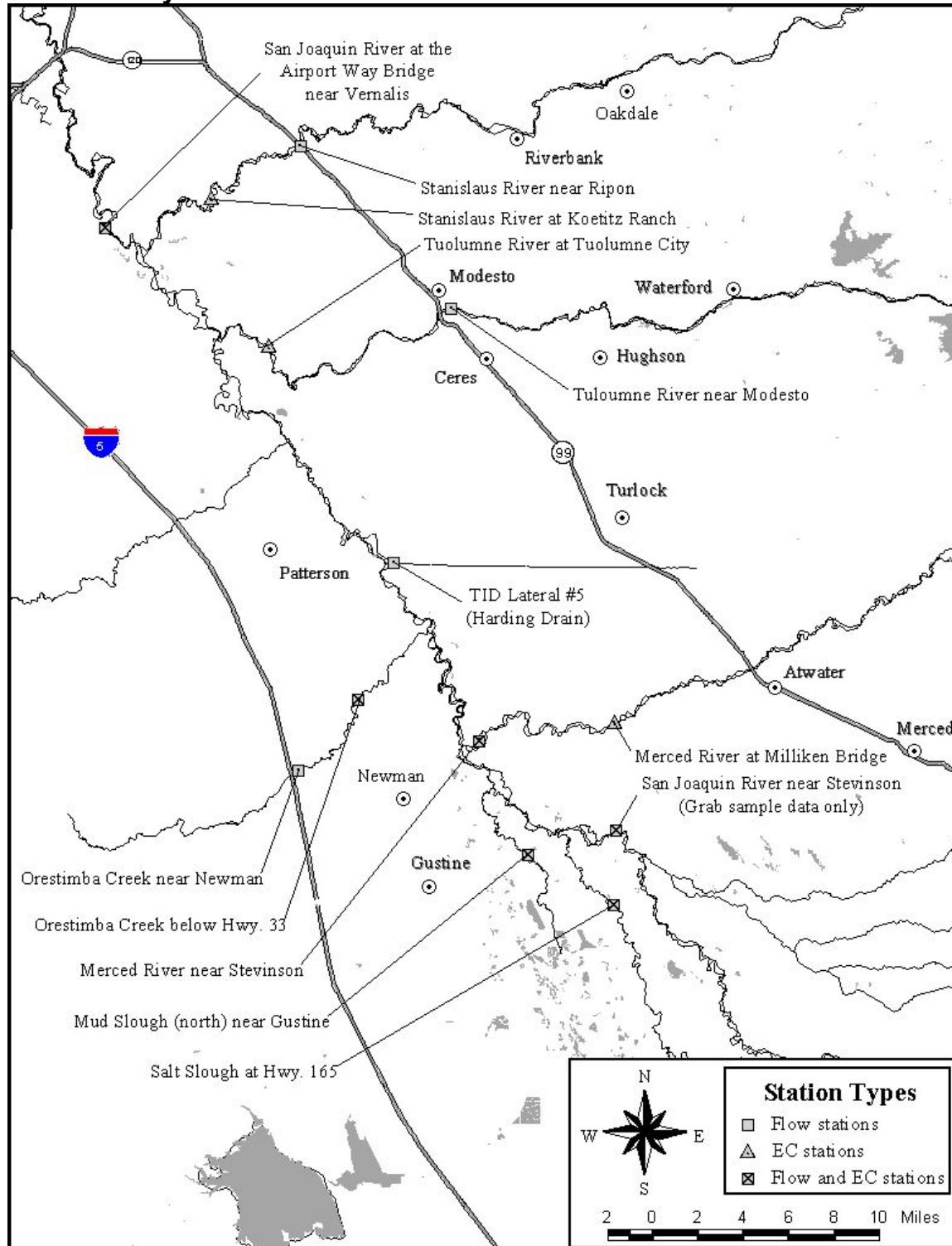
Table A-4. Flow Data Sources Used for TMDL Source Analysis

Period of Record	Site Code	Operator	Measurement Frequency
(1) SAN JOAQUIN RIVER AT THE AIRPORT WAY BRIDGE NEAR VERNALIS			
WY 77-97	11303500	USGS	Daily
(2) SAN JOAQUIN RIVER NEAR STEVINSON (Lander Ave.)			
WY 77--97	B07400	DWR	Daily
(3) MERCED RIVER NEAR STEVINSON			
WY 77-95	11272500	USGS	Daily
WY 96-97	B05125	DWR	Daily
(4) TUOLUMNE RIVER AT MODESTO			
WY 77-97	11290000	USGS	Daily
(5) STANISLAUS RIVER NEAR RIPON			
WY 77-97	11303000	USGS	Daily
(6) MUD SLOUGH (NORTH) NEAR GUSTINE			
WY 77-85		Estimated [†]	
WY 85-97	11262900	USGS	Daily
(7) SALT SLOUGH AT HWY 165 NEAR STEVINSON			
WY 77-85	B00470	DWR	Daily
WY 85-97	11261100	USGS	Daily

[†] Flow data used to determine historical Mud Slough loading was estimated from Salt Slough data and sporadic discharge measurements of Mud Slough. (*State Water Resources Control Board (SWRCB). 1987. SWRCB Order No. W.Q. 85-1 Technical Committee Report: Regulation of Agricultural Drainage to the San Joaquin River. Appendix C, (pp C54-C56). Sacramento, CA.*)

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Figure A-2: Lower San Joaquin River Sampling Locations Used in TMDL Source Analysis



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II Sub-area Loading Calculations

Salt and Boron Loads for the LSJR above Lander, Grasslands, Merced River, Tuolumne River, and Stanislaus River Sub-areas were calculated directly from the 21-year core data set (Appendix C). Monthly salt loads were calculated by converting monthly EC ($\mu\text{S}/\text{cm}$) to TDS (mg/L) using site-specific TDS/EC ratios for each tributary or river station (Table A-2). Average monthly salt concentration was used in conjunction with total monthly flow to calculate total monthly salt load at each site. The annual salt loads at each site are equal to the sum of the monthly salt loads (Equation A-1). The same method was used to calculate boron loads for each of the sub-areas. Monthly and mean annual salt and boron loading for the entire TMDL project area was also determined using flow, EC, and boron data from the LSJR at the Airport Way Bridge near Vernalis. The calculated annual salt loads and boron loads are in Tables A-9, A-10 and A-18.

$$L_a = \sum_{n=1}^{12} C_{mn} Q_{mn} \quad (\text{Equation A-1})$$

Where:

L_a = annual constituent load (TDS, boron)

C_m = monthly mean constituent concentration (TDS, boron)

Q_m = total monthly flow

n = months of water year

Note: water year runs from October of prior though September (e.g. water year 1997 runs from October 1996 through September 1997)

The Northwest Side and East Valley Floor Sub-areas do not have distinct drainage basins that discharge to the LSJR at a single point. These sub-areas are situated along the east and west sides of the LSJR and they drain diffusely to a 50-mile reach of the river. Discharges from these sub-areas are difficult to characterize as flow and water quality data is limited.

Salt and boron loading from the East Valley Floor Sub-area were estimated based on flow and water quality data from the Harding Drain. The Harding Drain drains approximately 53,000 acres, which represents approximately 17 percent of the entire East Valley Floor Sub-area. This approach assumes that discharges from the Harding Drain are representative of discharges from the entire East Valley Floor Sub-area. The estimates of flow and salt loading for the East Valley Floor Sub-area based on this assumption should be used with discretion because there is likely significant spatial variability in both flows and water quality throughout the sub-area.

Flows from the Harding Drain were available from the Turlock Irrigation District (TID) for Water Years 90-95 (reported as spills to river). For water years 1990-1992, TID's data collection effort appears to have been focused on the irrigation season and winter flows are not reported. Therefore, the annual flows for water years 1990-1992 are likely

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skewed downward. Daily USGS flow data was also available from June 1992 though November 1994, and the USGS data was used in lieu of the TID data for the period that it was available. Limited EC, TDS, and boron data (EC data n = 44, TDS data n = 41, boron data n = 18) was also available from the USGS for a 31-month period between May 1992 and November 1994 (USGS, 92, 93, 94 and 95). This data was used to calculate the flow-weighted average TDS concentration (mg/L) for the Harding Drain. Similarly, a flow-weighted average boron concentration was used to estimate the average monthly boron concentration.

Average monthly TDS and boron concentrations were used in conjunction with monthly flow to calculate monthly salt and boron loads for the Harding Drain. The 72 months of salt and boron loading data were added together then divided by 6, to estimate annual average salt and boron loading from the Harding Drain during the six-year period of record. Approximately 12,003 tons of salt and 3.5 tons of boron per year were discharged from the Harding Drain each year. However, approximately 8,145 tons of salt per year are discharged to the Harding Drain from the City of Turlock's wastewater treatment plant (section 3.3-III Municipal and Industrial discharges). This annual average salt loading from the City of Turlock's wastewater treatment plant was subtracted from the annual average Harding Drain salt load to estimate the non-point source salt loading from the Harding Drain. This yielded an annual average of approximately 3,858 tons of salt per year from the Harding Drain.

The Harding Drain drainage area represents approximately 17 percent of the East Valley Floor Sub-area; loads for the Harding Drain were therefore multiplied by a factor of 5.9 (100/17) to estimate the total annual non-point source loading to the LSJR from the East Valley Floor Sub-area. Based on the factor of 5.9, the East Valley Floor Sub-area contributes 22,749 tons of salt per year from non-point sources to the LSJR. Additionally, 25,442 tons of salt per year are attributable to the City of Turlock and the City of Modesto waste water treatment plants, both of which discharge to surface waters in the East Valley Floor Sub-area (section 3.3-III Municipal and Industrial discharges). East Valley floor Sub-area groundwater salt contributions to the LSJR were estimated by applying the groundwater loading rate of 165 tons per mile/year for shallow east-side groundwater accretions (see section 3.3-II Groundwater Accretions) to a 50-mile reach of the LSJR that flows adjacent to the East Valley Sub-area. Approximately 8,250 tons of salt are discharged from East Valley Floor Sub-area groundwater to the LSJR, bringing the estimated total annual salt loading from the East Valley Floor Sub-area up to 56,441 tons per year (sum of non-point source salt loads, M&I salt loads, and groundwater salt loads). 56,441 tons per year of salt was used as annual average salt load for the East Valley Floor Sub-area in the evaluation of the 21-year data set generated for the sites at which a full data set was available. Boron loading was determined simply by multiplying the Harding drain boron loads (3.5 tons/year) by a factor of 5.9, which results in approximately 20.6 tons of salt per year. No adjustments to the boron loading data were made to differentiate non-point source loading from point source loading.

Salt loading for the Northwest Side Sub-area was estimated by subtracting the sum of the loads for the 6 other sub-areas from the total load at the Airport Way Bridge near

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Vernalis. This estimate was also verified using two alternate methods. These alternate methods are described in Appendix D.

III Salt Imports to the LSJR

The total salt loads imported to the TMDL project area from the Delta via the DMC, were calculated to determine the relative impact of imported salts on the LSJR. The load of salts imported into each affected sub-area was also calculated.

Water quality and flow data was obtained from the USBR to determine the quantity of salt being transported via the DMC and delivered to public water agencies within the TMDL project area. Flow data for this analysis was obtained from the USBR Central Valley Operations Reports from 1977-1997, which report monthly water deliveries from the DMC and Mendota Pool to the 60 individual public water agencies that received supply water from the Delta during this 21-year period of record. Water quality data was obtained directly from spreadsheets provided by the USBR. Daily EC data was available from the USBR for the DMC at the Tracy pumping plant for the entire period of record, however, digital data was only available after 1991. Data prior to 1991 was based on the average of two daily EC values per month (seventh and 21st day of each month). Daily EC data was also available from 1992 through 1997 for the DMC at Check 13, and the DMC at Check 21. A linear regression of the EC data at Tracy versus the available EC data at check 13 (1992-1997) was used to develop a correlation between the two sites ($n=72$, $r^2=.83$). The linear correlation was used to estimate EC at check 13 from the EC at Tracy for October 1977 through December 1977 for which there was no data available. Monthly grab sample EC data was also available for the Mendota Pool (at the Mowry Bridge) from December 1985 through October 1992 and this monthly grab sample data was used to augment the available data for Mendota Pool deliveries. Monthly mean EC data for the available 1985-1998 water quality data set was used for water-years 1977 through 1992 for which there was no data available at check 21 (representing delivery quality from the Mendota Pool). An EC to TDS conversion factor of 0.62 was used to convert mean monthly EC in $\mu\text{S}/\text{cm}$ to mean monthly TDS in mg/L (all sites).

In order to track geographic differences of Delta supply water quality, the DMC was divided into two reaches. Reach 1 is from the Tracy pumping plant to just before the O'Neill Forebay and Reach 2 is from just after the O'Neill Forebay to the Mendota Pool (Figure A-3). This division was used to reflect the changes in water quality that occur as a result of the combined operations between State and Federal Water Projects at the O'Neill Forebay. Monthly mean TDS data for the Tracy pumping plant site was applied to deliveries made from the DMC Reach 1 and TDS data from Check 13 was applied to all deliveries from Reach 2. It is assumed that there is little change in the water quality of the DMC within each of these reaches. Monthly mean TDS data from Check 21, which is a water quality monitoring station on the DMC just before it flows into the Mendota Pool, was used to represent the quality of the deliveries from the Mendota Pool.

The location of each public water agency's diversion point on the DMC was used to determine the appropriate reach specific TDS value to apply to a given public water

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agency's supply water. The source reach for deliveries made to wetland users (Tables A-6, A-7, A-8) was determined by best professional judgment and inspection of public water agency boundary maps. Mean monthly EC and monthly flow were used to calculate the monthly loads delivered to each public water agency.

Table A-5: Location of DMC Water Quality Monitoring Stations	
Site Location	Mile Point [†]
Tracy Pumping Station	3.50 miles (salinity recorder) pumping plant @ 2.53
Check 13 O'Neill Forebay	70.01 miles
Check 21 Mendota Pool	116.48 miles

[†] miles from beginning of DMC

Sub-area boundaries were overlaid with the public water agencies' boundaries using a GIS to determine how much land area of each water agency is contained within each sub-area. In many instances, all of a water agency was within a given sub-area. For instances where an agency straddles two or more sub-areas, the GIS was used to determine the percent of the agency's jurisdictional area that lies within each sub-area. These area percentages were applied to the agency's total salt load to determine the amount of salt delivered to each sub-area from that agency. Salt loads delivered to each sub-area were calculated by adding the loads delivered to each public water agency, or portion thereof, within the given sub-area (See Tables A-6, A-7).

Approximately 513,000 tons of salt per year on average were imported annually to the TMDL project area from the Delta from 1977 to 1997. This is almost half of the total salt loading from the TMDL project area as measured at the Airport Way Bridge near Vernalis. The Grasslands, and the LSJR above Salt Slough Sub-areas received 423,297 and 89,890 tons of salt per year respectively. Nearly the same amount of salt was imported as was discharged from the Grasslands Sub-area over the 21-year period of record. This analysis demonstrates the need to consider source water supply when allocating loads to each of the sub-areas.

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Figure A-3: Delta Mendota Canal Locations

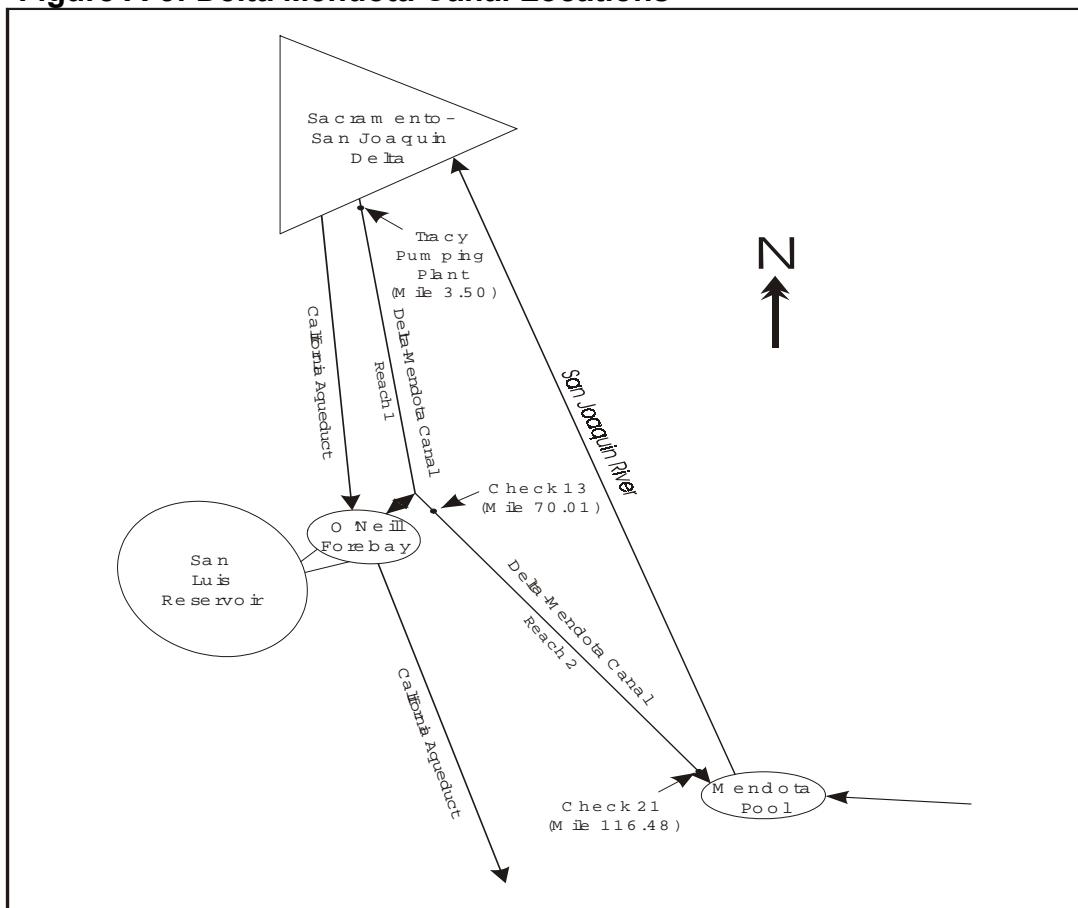
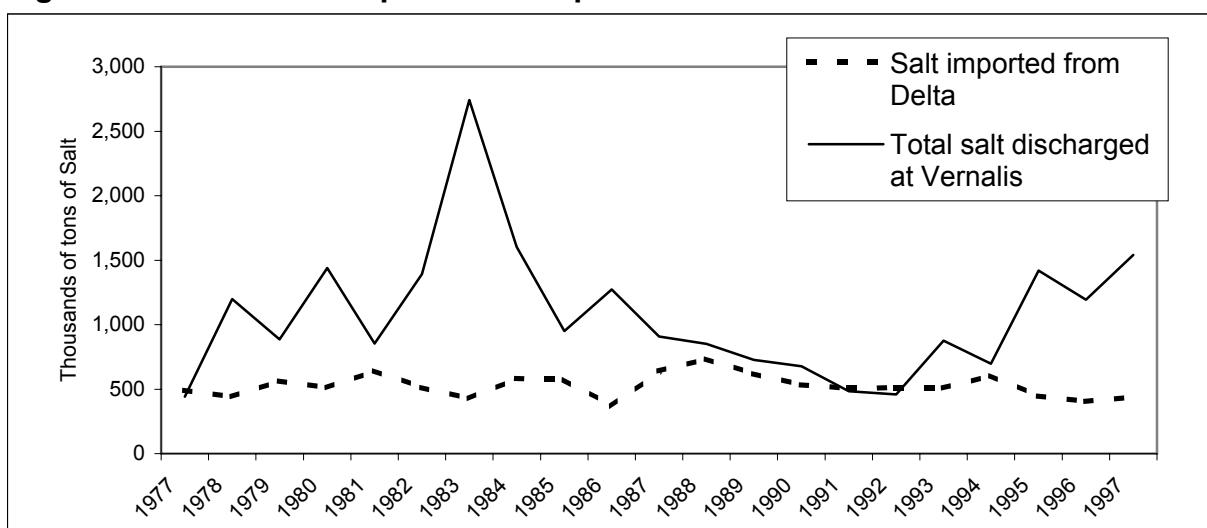


Figure A-4: LSJR Salt Imports and Exports



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Water District	Total WD Acreage	% of WD within sub-area	DMC Derived Salt Load	Mendota Pool Derived Salt Load	Total Annual Salt Load	Sub-area [†] Load
Broadview W.D.	9,716	100.0%	5,944		5,944	5,944
Central California I.D.	124,891	82.6%	45,355	188,011	233,366	192,860
Centinella W.D. old		100.0%	712		712	712
Clayton W.D. 3		0.1%				0
Columbia Canal Co.	16,147	100%		26,662	26,662	26,662
Davis W.D. old		100.0%	1,321		1,321	1,321
Del Puerto W.D.	11,145	23.2%	6,500		6,500	1,508
Eagle Field W.D.	1,481	100.0%	1,239		1,239	1,239
Firebaugh Canal W.D.	23,300	100.0%	5,210	25,295	30,506	30,506
Laguna W.D. 424		100.0%				0
Lansdale W.D. 755		100.0%				0
Los Banos Gravel ?		100.0%	9		9	9
Mercy Springs W.D. 3,584		100.0%	2,640	555	3,194	3,194
Mustang W.D. old		100.0%	3,541		3,541	3,541
Oro Loma W.D. 1,144		100.0%	1,499		1,499	1,499
Pacheco W.D. old		100.0%	1,361		1,361	1,361
Panoche W.D. 44,651		100.0%	11,338		11,338	11,338
Quinto W.D. old		100.0%	2,216		2,216	2,216
Romero W.D. old		100.0%	942		942	942
Stevinson W.D. 7		0.1%				0
San Luis Canal Co. 47,095		100.0%		70,583	70,583	70,582
San Luis W.D. 64,741		100.0%	10,369		10,369	10,369
Santa Nella County W.D. 75		100.0%				0
Turner Island W.D. 23		0.3%				0
Widren W.D. 889		100.0%	541		541	541
Wetlands ^{††} (state, federal, private)						56,940
Total Salt Load from the Delta:						
423,284 tons						
[†] equal to water district annual load multiplied by percent of district w/in sub-area,						
^{††} includes 52,000 acre Grasslands Water District						

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Table A-7: DMC salt loads delivered to public water agencies within Northwest Side sub-area (tons)

Water District	Total WD Acreage	% of WD Area within sub-area	DMC Salt Load	Mendota Salt Load	Total Annual Salt Load	Sub-area [†] Load
Central California I.D.	26,231	17.4%	45,355	188,011	233,366	40,506
Del Puerto W.D.	36,887	76.8%	6,500		6,500	4,991
El Solyo W.D.	4,075	100.0%				0
Foothill W.D.	old	100.0%	3,530		3,530	3,530
Hospital	old	100.0%	8,211		8,211	8,211
Kern Canon W.D.	old	100.0%	2,054		2,054	2,054
Oak Flat W.D.	4,778	100.0%				0
Orestimba W.D.	old	100.0%	4,677		4,677	4,677
Patterson W.D.	13,791	100.0%	5,137		5,137	5,137
Salado W.D.	old	100.0%	2,331		2,331	2,331
Stevinson W.D.	799	10.6%				0
Sunflower W.D.	old	100.0%	3,900		3,900	3,900
Turlock I.D.	6	<0.1%				0
West Stanislaus I.D.	22,899	100.0%	14,553		14,553	14,553
Total Salt Load from the Delta:						89,890 tons
[†] equal to water district annual load multiplied by percent of district w/in sub-area						

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Table A-8: DMC Turnouts and Mile Markers and corresponding Reach Numbers

Facility/Turnout/User	Mile Marker	Reach Number/Source
Banta Carbona ID	20.42	1
Broadview WD	102.95	2
Central California ID	58.27, 60.65, 76.05, 83.08	1 & 2
Centinella WD	66.2	1
China Island (76.05)	76.05	2
Del Puerto WD	19 turnouts between 35.73 – 42.51	1
Eagle Field WD	93.27, 94.57	2
Firebaugh Canal	107.85	2
Frietas Unit (76.05L)	76.05	2
Mercy Springs WD	97.70, 98.74	2
Oro Loma WD	95.50, 96.62	2
Panoche WD – Ag	93.25	2
Patterson WD	42.51	1
Plainview WD	31 turnouts between 8.52 – 20.97	1
Salt Slough Unit (76.05)	76.05	2
San Luis WD – Ag	39 turnouts between 68.83 – 90.53	1 & 2
Tracy, City of	15.95	1
West Side ID	8.51	1
Widren WD	102.04	2
W. Stanislaus ID	31.31, 38.14	1
Panoche WD - M&I	93.25	2
F&G-Los Banos-W1429	76.05	2
F&G-Volta WM - W1429	69.98	1
Grassland-76.05L-W1430	76.05	2
Grassland-Volta-W1430	76.05	2
FWS-Kern -Volta-W1431	69.98	1
FWS-Kest. 76.05-W1431	76.05	2
Check 20 near Firebaugh	111.26	2
Central California I.D.	N/A	Mendota Pool
Columbia Canal Co.	N/A	Mendota Pool
Firebaugh Canal Co.	N/A	Mendota Pool
James I.D.	N/A	Mendota Pool
San Luis Canal Co.	N/A	Mendota Pool
Grasslands W.D.	N/A	Mendota Pool
Mercy Springs W.D.	N/A	Mendota Pool
San Luis Drain (USBR)	N/A	Mendota Pool
San Luis W.D.	N/A	Mendota Pool
Westlands W.D.	N/A	Mendota Pool
Patos Unlimited	N/A	Mendota Pool
Loundy, Mason A.	N/A	Mendota Pool

APPENDIX A

Table A-9: Annual sub-area salt loads (thousand tons)

Water Year	SJRW abv. Salt Sl.	Grasslands	North West Side*	East Valley Floor**	Merced River	Tuolumne River	Stanislaus River	Total
1977	8	210	59	57	13	86	13	447
1978	210	480	250	57	55	71	80	1,203
1979	62	420	130	57	51	100	68	888
1980	170	420	470	57	73	140	110	1,439
1981	27	470	160	57	27	80	38	858
1982	150	390	480	57	86	150	68	1,380
1983	520	390	1,200	57	140	260	150	2,717
1984	160	420	580	57	69	200	120	1,606
1985	32	540	110	57	39	110	67	955
1986	130	490	370	57	49	88	78	1,261
1987	27	440	250	57	26	63	52	915
1988	18	460	220	57	23	33	43	854
1989	16	390	190	57	27	18	33	730
1990	7	380	150	57	25	25	30	674
1991	9	220	140	57	15	23	23	487
1992	29	200	110	57	23	25	20	464
1993	53	340	310	57	32	58	33	882
1994	16	380	160	57	21	30	35	699
1995	200	500	390	57	80	150	49	1,426
1996	64	480	380	57	57	100	51	1,190
1997	190	450	540	57	80	130	96	1,543
Mean	100	400	320	56	48	92	60	1077

Table A-10: Annual sub-area boron loading (tons)

Water Year	SJR abv. Salt Sl.	Grasslands	North West Side*	East Valley Floor**	Merced River	Tuolumne River	Stanislaus River	Total
1977	3	190	140	21	3	6	2	360
1978	69	440	400	21	13	15	21	980
1979	21	380	250	21	15	27	16	730
1980	58	390	620	21	24	43	29	1,200
1981	9	420	210	21	9	20	13	700
1982	52	360	630	21	22	44	17	1,100
1983	170	360	1,500	21	47	81	40	2,200
1984	55	390	760	21	20	38	32	1,300
1985	10	490	200	21	10	20	21	770
1986	65	670	410	21	16	32	24	1,200
1987	10	650	160	21	6	19	20	890
1988	7	640	150	21	5	6	17	850
1989	4	580	180	21	4	5	18	810
1990	2	560	84	21	4	6	13	690
1991	5	310	76	21	3	6	8	430
1992	7	270	130	21	4	6	10	450
1993	22	560	250	21	12	15	13	890
1994	8	560	100	21	8	11	15	720
1995	590	740	67	21	25	47	16	1,500
1996	19	680	380	21	15	29	20	1,200
1997	210	740	460	21	26	45	36	1,500
Mean	66	490	340	21	14	25	19	975

* Estimated by subtracting all other sub-areas from total load at Vernalis ** Held constant based on estimated mean annual load for WYs 1990-1995

APPENDIX A

Table A-18. Mean annual flow by sub-area (1000 acre feet)

Water Year	SJR abv. Salt Sl.	Grasslands	North West Side*	East Valley Floor**	Merced River	Tuolumne River	Stanislaus River	Total
1977	10	92	-94	149	65	153	42	417
1978	1,986	201	163	149	553	471	957	4,480
1979	246	195	-64	149	554	958	576	2,614
1980	1,398	240	177	149	993	1,777	1,258	5,991
1981	62	191	82	149	245	717	320	1,766
1982	1,206	200	277	149	1,001	2,009	633	5,474
1983	5,971	342	788	149	2,284	3,995	1,877	15,406
1984	1,285	240	841	149	795	1,677	1,319	6,306
1985	70	242	173	149	300	593	599	2,125
1986	1,309	284	529	149	623	1,334	998	5,226
1987	51	234	145	149	159	523	552	1,813
1988	20	230	57	149	110	156	446	1,168
1989	13	211	16	149	100	134	436	1,059
1990	6	195	9	149	89	157	311	916
1991	19	102	-31	149	71	148	199	657
1992	24	85	-50	149	104	152	235	700
1993	196	168	113	149	363	357	357	1,702
1994	33	184	15	149	216	266	356	1,219
1995	1,898	264	308	149	1,083	2,156	442	6,299
1996	367	268	552	149	657	1,183	777	3,953
1997	1,941	288	822	149	1,161	1,954	1,566	7,882
Mean	862	212	230	149	549	994	679	3,675

* Estimated by subtracting all other sub-areas from total load at Verbalis **Held constant based on estimated mean annual flow from TID Lateral #5, and estimated groundwater accretions from EVF sub-area

APPENDIX A

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Table A11: Core Data Set
San Joaquin River at Lander Avenue

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	877	<i>659</i>	785	<i>0.22</i>	524
Nov-76	1,751	<i>515</i>	1,227	<i>0.17</i>	818
Dec-76	1,125	<i>603</i>	922	<i>0.20</i>	615
Jan-77	1,775	<i>513</i>	1,238	<i>0.17</i>	825
Feb-77	827	<i>673</i>	756	<i>0.22</i>	504
Mar-77	1,490	<i>546</i>	1,106	<i>0.18</i>	737
Apr-77	742	<i>699</i>	705	<i>0.23</i>	470
May-77	519	<i>793</i>	560	<i>0.26</i>	373
Jun-77	173	<i>1171</i>	275	<i>0.39</i>	184
Jul-77	58	<i>1725</i>	136	<i>0.58</i>	91
Aug-77	330	<i>931</i>	418	<i>0.31</i>	279
Sep-77	244	<i>1037</i>	344	<i>0.35</i>	229
Oct-77	105	<i>1398</i>	200	<i>0.47</i>	133
Nov-77	269	<i>1001</i>	366	<i>0.33</i>	244
Dec-77	615	<i>747</i>	625	<i>0.25</i>	416
Jan-78	41,330	<i>168</i>	9,442	<i>0.06</i>	6,294
Feb-78	221,200	<i>93</i>	27,878	<i>0.03</i>	18,585
Mar-78	409,000	<i>75</i>	41,453	<i>0.02</i>	27,635
Apr-78	726,200	<i>61</i>	60,046	<i>0.02</i>	40,031
May-78	494,800	<i>70</i>	46,875	<i>0.02</i>	31,250
Jun-78	74,100	<i>137</i>	13,763	<i>0.05</i>	9,175
Jul-78	2,977	<i>427</i>	1,728	<i>0.14</i>	1,152
Aug-78	2,692	<i>443</i>	1,620	<i>0.15</i>	1,080
Sep-78	12,240	<i>259</i>	4,305	<i>0.09</i>	2,870
Oct-78	8,499	<i>294</i>	3,402	<i>0.10</i>	2,268
Nov-78	2,953	<i>428</i>	1,719	<i>0.14</i>	1,146
Dec-78	6,337	<i>327</i>	2,815	<i>0.11</i>	1,876
Jan-79	61,830	<i>146</i>	12,245	<i>0.05</i>	8,163
Feb-79	69,380	<i>140</i>	13,190	<i>0.05</i>	8,793
Mar-79	50,050	<i>157</i>	10,683	<i>0.05</i>	7,122
Apr-79	17,510	<i>228</i>	5,424	<i>0.08</i>	3,616
May-79	10,320	<i>275</i>	3,856	<i>0.09</i>	2,571
Jun-79	2,428	<i>459</i>	1,515	<i>0.15</i>	1,010
Jul-79	3,170	<i>418</i>	1,800	<i>0.14</i>	1,200
Aug-79	2,305	<i>468</i>	1,465	<i>0.16</i>	977
Sep-79	11,160	<i>267</i>	4,056	<i>0.09</i>	2,704
Oct-79	9,527	<i>283</i>	3,662	<i>0.09</i>	2,441
Nov-79	1,741	<i>517</i>	1,223	<i>0.17</i>	815
Dec-79	3,066	<i>423</i>	1,762	<i>0.14</i>	1,174
Jan-80	188,200	<i>98</i>	25,117	<i>0.03</i>	16,745
Feb-80	344,600	<i>79</i>	37,113	<i>0.03</i>	24,742
Mar-80	592,100	<i>65</i>	52,633	<i>0.02</i>	35,089
Apr-80	73,620	<i>137</i>	13,705	<i>0.05</i>	9,137

italicized = estimated

Table A11: Core Data Set
San Joaquin River at Lander Avenue

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
May-80	114,400	<i>117</i>	18,215	<i>0.04</i>	12,144
Jun-80	18,580	<i>223</i>	5,636	<i>0.07</i>	3,757
Jul-80	32,770	<i>182</i>	8,128	<i>0.06</i>	5,419
Aug-80	5,024	<i>355</i>	2,423	<i>0.12</i>	1,615
Sep-80	13,880	<i>247</i>	4,669	<i>0.08</i>	3,112
Oct-80	10,430	<i>274</i>	3,882	<i>0.09</i>	2,588
Nov-80	2,280	<i>469</i>	1,455	<i>0.16</i>	970
Dec-80	2,230	<i>473</i>	1,434	<i>0.16</i>	956
Jan-81	5,430	<i>345</i>	2,547	<i>0.12</i>	1,698
Feb-81	6,850	<i>318</i>	2,960	<i>0.11</i>	1,973
Mar-81	20,170	<i>217</i>	5,942	<i>0.07</i>	3,962
Apr-81	4,270	<i>376</i>	2,181	<i>0.13</i>	1,454
May-81	3,710	<i>395</i>	1,992	<i>0.13</i>	1,328
Jun-81	1,250	<i>581</i>	987	<i>0.19</i>	658
Jul-81	1,130	<i>602</i>	925	<i>0.20</i>	617
Aug-81	1,460	<i>550</i>	1,091	<i>0.18</i>	727
Sep-81	2,840	<i>434</i>	1,677	<i>0.14</i>	1,118
Oct-81	4,240	<i>377</i>	2,172	<i>0.13</i>	1,448
Nov-81	4,901	<i>358</i>	2,384	<i>0.12</i>	1,590
Dec-81	6,878	<i>317</i>	2,967	<i>0.11</i>	1,978
Jan-82	44,897	<i>163</i>	9,960	<i>0.05</i>	6,640
Feb-82	52,813	<i>154</i>	11,060	<i>0.05</i>	7,374
Mar-82	64,942	<i>143</i>	12,639	<i>0.05</i>	8,426
Apr-82	600,257	<i>65</i>	53,100	<i>0.02</i>	35,400
May-82	339,913	<i>80</i>	36,787	<i>0.03</i>	24,525
Jun-82	40,000	<i>170</i>	9,244	<i>0.06</i>	6,163
Jul-82	12,714	<i>255</i>	4,412	<i>0.09</i>	2,941
Aug-82	4,129	<i>380</i>	2,135	<i>0.13</i>	1,423
Sep-82	30,111	<i>188</i>	7,696	<i>0.06</i>	5,131
Oct-82	30,260	<i>188</i>	7,721	<i>0.06</i>	5,147
Nov-82	120,330	<i>115</i>	18,819	<i>0.04</i>	12,546
Dec-82	557,450	<i>67</i>	50,624	<i>0.02</i>	33,749
Jan-83	570,800	<i>66</i>	51,403	<i>0.02</i>	34,269
Feb-83	865,470	<i>57</i>	67,246	<i>0.02</i>	44,831
Mar-83	1,179,000	<i>51</i>	82,097	<i>0.02</i>	54,731
Apr-83	790,410	<i>59</i>	63,422	<i>0.02</i>	42,281
May-83	608,750	<i>65</i>	53,584	<i>0.02</i>	35,723
Jun-83	642,760	<i>64</i>	55,498	<i>0.02</i>	36,998
Jul-83	448,410	<i>72</i>	43,989	<i>0.02</i>	29,326
Aug-83	46,770	<i>161</i>	10,226	<i>0.05</i>	6,817
Sep-83	110,140	<i>119</i>	17,775	<i>0.04</i>	11,850
Oct-83	178,160	<i>100</i>	24,244	<i>0.03</i>	16,163
Nov-83	177,740	<i>100</i>	24,207	<i>0.03</i>	16,138

italicized = estimated

Table A11: Core Data Set
San Joaquin River at Lander Avenue

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Dec-83	338,060	<i>80</i>	36,657	<i>0.03</i>	24,438
Jan-84	494,800	<i>70</i>	46,875	<i>0.02</i>	31,250
Feb-84	33,430	<i>181</i>	8,233	<i>0.06</i>	5,489
Mar-84	15,080	<i>240</i>	4,925	<i>0.08</i>	3,284
Apr-84	12,920	<i>254</i>	4,458	<i>0.08</i>	2,972
May-84	9,800	<i>280</i>	3,729	<i>0.09</i>	2,486
Jun-84	5,900	<i>335</i>	2,688	<i>0.11</i>	1,792
Jul-84	2,120	<i>482</i>	1,388	<i>0.16</i>	926
Aug-84	5,230	<i>350</i>	2,487	<i>0.12</i>	1,658
Sep-84	12,100	<i>260</i>	4,273	<i>0.09</i>	2,849
Oct-84	17,812	100	2,422	<i>0.03</i>	1,614
Nov-84	2,731	213	791	<i>0.07</i>	527
Dec-84	4,748	325	2,098	<i>0.11</i>	1,399
Jan-85	4,024	438	2,396	<i>0.15</i>	1,597
Feb-85	6,190	443	3,728	<i>0.15</i>	2,485
Mar-85	11,940	514	8,343	<i>0.17</i>	5,562
Apr-85	4,540	585	3,611	<i>0.20</i>	2,407
May-85	2,763	657	2,468	<i>0.22</i>	1,645
Jun-85	3,275	617	2,747	0.10	890
Jul-85	1,139	799	1,237	0.36	1,115
Aug-85	2,136	429	1,246	0.16	900
Sep-85	8,622	120	1,407	0.00	59
Oct-85	5,849	189	1,503	0.27	4,294
Nov-85	2,293	431	1,344	0.22	1,340
Dec-85	7,049	262	2,511	0.22	4,121
Jan-86	8,245	431	4,831	0.34	7,697
Feb-86	82,469	84	9,418	0.06	12,333
Mar-86	688,998	70	65,568	0.00	4,683
Apr-86	399,788	51	27,719	0.07	76,092
May-86	49,436	123	8,267	0.03	4,032
Jun-86	36,159	116	5,702	0.06	6,309
Jul-86	4,405	383	2,294	0.20	2,395
Aug-86	5,829	187	1,482	0.11	1,743
Sep-86	18,349	100	2,495	0.08	3,991
Oct-86	14,204	126	2,433	0.01	386
Nov-86	1,388	498	940	0.16	604
Dec-86	3,488	453	2,148	0.21	1,992
Jan-87	6,460	401	3,522	0.27	4,655
Feb-87	5,564	245	1,853	0.20	3,026
Mar-87	11,000	495	7,402	0.14	4,187
Apr-87	1,458	1180	2,339	0.21	833
May-87	1,902	726	1,877	0.35	1,810
Jun-87	1,275	690	1,196	0.13	451

italicized = estimated

Table A11: Core Data Set
San Joaquin River at Lander Avenue

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jul-87	989	803	1,080	0.28	753
Aug-87	1,176	831	1,329	0.31	991
Sep-87	2,386	237	769	0.19	1,233
Oct-87	1,240	362	610	0.04	118
Nov-87	1,374	881	1,646	0.23	859
Dec-87	2,237	579	1,761	0.26	1,581
Jan-88	4,314	315	1,847	0.29	3,402
Feb-88	2,793	694	2,635	0.33	2,506
Mar-88	1,555	768	1,624	0.28	1,175
Apr-88	3,353	964	4,394	0.23	2,051
May-88	1,238	844	1,421	0.30	1,010
Jun-88	533	1060	768	0.30	435
Jul-88	444	973	587	0.38	453
Aug-88	527	956	685	0.32	462
Sep-88	331	875	394	0.30	270
Oct-88	201	900	246	0.25	135
Nov-88	85	900	104	0.28	65
Dec-88	192	900	235	0.26	136
Jan-89	3,134	900	3,835	0.41	3,465
Feb-89	1,918	900	2,347	0.12	626
Mar-89	4,342	900	5,313	0.14	1,676
Apr-89	612	900	749	0.32	528
May-89	676	900	827	0.37	680
Jun-89	391	900	478	0.36	383
Jul-89	238	900	291	0.39	249
Aug-89	654	900	800	0.37	653
Sep-89	422	900	516	0.26	296
Oct-89	362	1709	841	0.22	217
Nov-89	74	641	64	0.19	38
Dec-89	52	845	60	0.24	34
Jan-90	574	854	666	0.23	351
Feb-90	1,599	473	1,028	0.19	826
Mar-90	1,734	866	2,041	0.30	1,433
Apr-90	565	1319	1,013	0.36	557
May-90	454	1297	801	0.34	422
Jun-90	348	833	394	0.31	293
Jul-90	39	1595	85	0.61	65
Aug-90	107	1392	202	0.56	164
Sep-90	29	1450	57	0.53	42
Oct-90	99	2080	280	0.67	180
Nov-90	109	2116	314	0.73	217
Dec-90	8	2118	23	0.70	15
Jan-91	23	1930	60	0.69	43

italicized = estimated

Table A11: Core Data Set
San Joaquin River at Lander Avenue

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Feb-91	122	1479	245	0.45	148
Mar-91	15,580	208	4,406	0.14	6,015
Apr-91	747	698	709	0.25	508
May-91	638	1356	1,176	0.38	656
Jun-91	349	1259	597	0.39	365
Jul-91	611	1173	974	0.33	548
Aug-91	203	1252	346	0.44	243
Sep-91	70	1616	154	0.55	104
Oct-91	1,014	2500	3,446	0.75	2,057
Nov-91	1,020	800	1,109	0.21	592
Dec-91	66	700	63	0.48	87
Jan-92	195	700	186	0.27	144
Feb-92	16,570	850	19,148	0.13	5,857
Mar-92	2,188	650	1,933	0.25	1,511
Apr-92	1,109	800	1,206	0.33	995
May-92	489	1050	698	0.40	537
Jun-92	1,125	900	1,376	0.64	1,942
Jul-92	123	750	125	0.76	255
Aug-92	63	700	60	0.89	152
Sep-92	27	750	28	0.94	69
Oct-92	31	2585	109	0.96	81
Nov-92	20	2617	71	1.03	56
Dec-92	43	2530	148	0.94	110
Jan-93	100,400	107	14,605	0.05	12,967
Feb-93	39,330	147	7,860	0.09	9,090
Mar-93	31,350	376	16,025	0.12	10,229
Apr-93	16,420	207	4,621	0.11	4,822
May-93	2,019	974	2,673	0.30	1,647
Jun-93	2,315	628	1,976	0.21	1,338
Jul-93	1,802	828	2,028	0.29	1,431
Aug-93	1,505	783	1,602	0.34	1,391
Sep-93	804	871	952	0.33	710
Oct-93	1,278	186	323	0.27	924
Nov-93	2,716	185	683	0.13	938
Dec-93	444	621	375	0.21	257
Jan-94	2,466	466	1,562	0.36	2,382
Feb-94	16,760	206	4,694	0.11	5,024
Mar-94	3,857	400	2,097	0.24	2,477
Apr-94	1,598	634	1,377	0.28	1,220
May-94	1,778	697	1,685	0.27	1,287
Jun-94	1,084	880	1,297	0.31	928
Jul-94	788	914	979	0.36	761
Aug-94	411	876	489	0.42	469

italicized = estimated

Table A11: Core Data Set
San Joaquin River at Lander Avenue

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Sep-94	101	944	130	0.37	100
Oct-94	99	1301	174	0.57	154
Nov-94	482	678	444	0.16	210
Dec-94	170	866	201	0.32	148
Jan-95	81,164	80	8,870	0.28	61,792
Feb-95	14,563	382	7,570	0.10	3,960
Mar-95	399,164	129	70,142	0.06	65,120
Apr-95	422,994	59	33,957	0.24	274,099
May-95	566,563	44	33,719	0.29	446,741
Jun-95	152,465	105	21,750	0.12	47,673
Jul-95	221,961	39	11,881	0.40	238,991
Aug-95	22,015	193	5,769	0.41	24,556
Sep-95	16,138	104	2,272	0.38	16,657
Oct-95	9,965	97	1,313	0.01	339
Nov-95	2,854	189	732	0.11	854
Dec-95	6,782	222	2,049	0.07	1,291
Jan-96	9,504	371	4,800	0.05	1,292
Feb-96	65,151	149	13,227	0.01	2,214
Mar-96	129,379	96	16,970	0.06	21,107
Apr-96	9,947	353	4,776	0.09	2,434
May-96	103,000	67	9,340	0.01	3,501
Jun-96	9,620	306	4,007	0.06	1,569
Jul-96	6,233	304	2,578	0.13	2,203
Aug-96	6,780	283	2,612	0.06	1,106
Sep-96	7,531	164	1,681	0.01	256
Oct-96	4,887	144	958	0.01	166
Nov-96	6,281	243	2,077	0.01	213
Dec-96	109,498	89	13,185	0.01	3,722
Jan-97	977,619	66	87,347	0.01	33,227
Feb-97	739,243	60	60,156	0.16	321,997
Mar-97	91,248	142	17,607	0.19	47,046
Apr-97	5,332	502	3,639	0.11	1,595
May-97	2,113	859	2,469	0.29	1,658
Jun-97	1,995	763	2,069	0.28	1,510
Jul-97	1,752	667	1,588	0.16	762
Aug-97	1,139	682	1,056	0.41	1,271
Sep-97	389	853	451	0.38	402

italicized = estimated

Table A12: Core Data Set
San Joaquin River near Vernalis

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	78,310	624	66,433	<i>0.51</i>	108,906
Nov-76	67,600	630	57,898	<i>0.52</i>	94,915
Dec-76	59,330	648	52,267	<i>0.53</i>	85,684
Jan-77	67,070	973	88,720	<i>0.80</i>	145,442
Feb-77	43,790	1,042	62,033	<i>0.85</i>	101,693
Mar-77	32,200	661	28,936	<i>0.54</i>	47,436
Apr-77	12,620	981	16,831	<i>0.80</i>	27,592
May-77	24,580	849	28,371	<i>0.70</i>	46,509
Jun-77	7,020	1,014	9,677	<i>0.83</i>	15,864
Jul-77	5,710	998	7,747	<i>0.82</i>	12,700
Aug-77	7,640	958	9,950	<i>0.79</i>	16,312
Sep-77	10,630	952	13,758	<i>0.78</i>	22,554
Oct-77	15,140	958	19,718	<i>0.79</i>	32,325
Nov-77	25,570	743	25,828	<i>0.61</i>	42,342
Dec-77	31,100	620	26,214	<i>0.51</i>	42,974
Jan-78	139,900	368	69,991	<i>0.30</i>	114,740
Feb-78	406,500	231	127,659	<i>0.19</i>	209,277
Mar-78	705,600	206	197,608	<i>0.17</i>	323,948
Apr-78	1,192,000	176	285,212	<i>0.14</i>	467,561
May-78	1,176,000	132	211,038	<i>0.11</i>	345,964
Jun-78	420,700	116	66,345	<i>0.10</i>	108,763
Jul-78	117,300	332	52,944	<i>0.27</i>	86,793
Aug-78	87,190	527	62,468	<i>0.43</i>	102,406
Sep-78	162,500	240	53,021	<i>0.20</i>	86,919
Oct-78	204,600	183	50,902	<i>0.15</i>	83,446
Nov-78	208,100	214	60,543	<i>0.18</i>	99,251
Dec-78	172,900	270	63,466	<i>0.22</i>	104,042
Jan-79	321,800	170	74,373	<i>0.14</i>	121,923
Feb-79	396,400	217	116,943	<i>0.18</i>	191,709
Mar-79	532,000	171	123,676	<i>0.14</i>	202,748
Apr-79	208,600	357	101,242	<i>0.29</i>	165,971
May-79	155,200	360	75,958	<i>0.30</i>	124,521
Jun-79	134,100	310	56,516	<i>0.25</i>	92,649
Jul-79	82,000	439	48,939	<i>0.36</i>	80,228
Aug-79	89,220	463	56,159	<i>0.38</i>	92,065
Sep-79	109,500	378	56,271	<i>0.31</i>	92,248
Oct-79	171,600	234	54,590	<i>0.19</i>	89,492
Nov-79	137,500	322	60,192	<i>0.26</i>	98,675
Dec-79	152,900	297	61,737	<i>0.24</i>	101,208
Jan-80	803,600	228	249,089	<i>0.19</i>	408,342
Feb-80	1,080,000	149	218,771	<i>0.12</i>	358,641
Mar-80	1,555,000	133	281,165	<i>0.11</i>	460,926
Apr-80	609,900	165	136,811	<i>0.14</i>	224,281

italicized = estimated

Table A12: Core Data Set
San Joaquin River near Vernalis

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
May-80	609,500	101	83,690	<i>0.08</i>	137,197
Jun-80	315,700	150	64,379	<i>0.12</i>	105,540
Jul-80	208,000	213	60,231	<i>0.17</i>	98,740
Aug-80	121,100	449	73,921	<i>0.37</i>	121,182
Sep-80	226,200	310	95,331	<i>0.25</i>	156,280
Oct-80	250,400	167	56,850	<i>0.14</i>	93,197
Nov-80	195,000	225	59,648	<i>0.18</i>	97,784
Dec-80	181,400	304	74,970	<i>0.25</i>	122,902
Jan-81	199,900	200	54,353	<i>0.16</i>	89,103
Feb-81	159,900	681	148,039	<i>0.56</i>	242,686
Mar-81	192,000	441	115,112	<i>0.36</i>	188,708
Apr-81	150,700	423	86,663	<i>0.35</i>	142,070
May-81	120,900	418	68,704	<i>0.34</i>	112,629
Jun-81	89,180	429	52,012	<i>0.35</i>	85,266
Jul-81	77,790	423	44,735	<i>0.35</i>	73,335
Aug-81	78,050	475	50,402	<i>0.39</i>	82,626
Sep-81	70,300	446	42,625	<i>0.37</i>	69,878
Oct-81	85,250	342	39,637	<i>0.28</i>	64,979
Nov-81	93,070	416	52,636	<i>0.34</i>	86,288
Dec-81	113,900	476	73,707	<i>0.39</i>	120,831
Jan-82	239,100	396	128,722	<i>0.32</i>	211,020
Feb-82	369,100	335	168,100	<i>0.27</i>	275,574
Mar-82	618,700	171	143,832	<i>0.14</i>	235,790
Apr-82	1,366,000	128	237,706	<i>0.10</i>	389,682
May-82	1,147,000	90	140,341	<i>0.07</i>	230,068
Jun-82	451,300	201	123,322	<i>0.16</i>	202,167
Jul-82	378,900	245	126,203	<i>0.20</i>	206,890
Aug-82	247,000	261	87,643	<i>0.21</i>	143,677
Sep-82	364,700	143	70,901	<i>0.12</i>	116,231
Oct-82	502,900	91	62,216	<i>0.07</i>	101,993
Nov-82	415,000	155	87,450	<i>0.13</i>	143,360
Dec-82	1,014,000	106	146,124	<i>0.09</i>	239,548
Jan-83	1,172,000	124	197,573	<i>0.10</i>	323,891
Feb-83	1,755,000	141	336,415	<i>0.12</i>	551,500
Mar-83	2,462,000	161	538,881	<i>0.13</i>	883,412
Apr-83	2,169,000	166	489,493	<i>0.14</i>	802,448
May-83	1,954,000	111	294,867	<i>0.09</i>	483,389
Jun-83	1,552,000	84	177,235	<i>0.07</i>	290,550
Jul-83	1,182,000	113	181,583	<i>0.09</i>	297,677
Aug-83	555,500	192	144,999	<i>0.16</i>	237,703
Sep-83	673,000	93	85,090	<i>0.08</i>	139,491
Oct-83	818,800	91	101,297	<i>0.07</i>	166,061
Nov-83	635,200	227	196,027	<i>0.19</i>	321,355

italicized = estimated

Table A12: Core Data Set
San Joaquin River near Vernalis

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Dec-83	1,176,000	121	193,451	<i>0.10</i>	317,133
Jan-84	1,576,000	144	308,530	<i>0.12</i>	505,787
Feb-84	623,100	208	176,198	<i>0.17</i>	288,849
Mar-84	461,300	228	142,987	<i>0.19</i>	234,405
Apr-84	255,000	374	129,656	<i>0.31</i>	212,550
May-84	199,200	326	88,285	<i>0.27</i>	144,729
Jun-84	136,700	363	67,461	<i>0.30</i>	110,592
Jul-84	117,100	419	66,704	<i>0.34</i>	109,350
Aug-84	134,000	419	76,330	<i>0.34</i>	125,132
Sep-84	173,600	238	56,170	<i>0.20</i>	92,082
Oct-84	247,800	211	71,083	<i>0.17</i>	116,529
Nov-84	170,500	301	69,770	<i>0.25</i>	114,377
Dec-84	293,600	205	81,826	<i>0.17</i>	134,140
Jan-85	250,300	277	94,258	<i>0.23</i>	154,522
Feb-85	180,100	369	90,348	<i>0.30</i>	148,112
Mar-85	168,600	454	104,062	<i>0.37</i>	170,594
Apr-85	145,500	482	95,343	<i>0.40</i>	156,300
May-85	131,200	460	82,049	0.39	139,126
Jun-85	104,200	463	65,589	0.43	121,828
Jul-85	157,900	315	67,619	0.16	68,693
Aug-85	160,900	312	68,248	0.30	129,059
Sep-85	114,800	384	59,931	0.30	93,018
Oct-85	127,368	301	52,057	0.18	61,186
Nov-85	114,756	406	63,400	0.26	81,126
Dec-85	135,558	455	83,933	0.46	168,231
Jan-86	126,615	502	86,371	0.51	176,038
Feb-86	485,478	178	117,598	0.21	276,375
Mar-86	1,539,006	107	224,560	0.12	512,654
Apr-86	1,165,409	113	179,714	0.11	358,492
May-86	538,741	169	123,675	0.13	197,047
Jun-86	370,821	192	96,708	0.21	209,236
Jul-86	177,895	371	89,650	0.33	159,620
Aug-86	195,682	294	78,216	0.28	150,066
Sep-86	248,708	228	77,178	0.18	120,285
Oct-86	229,988	201	62,969	0.12	74,916
Nov-86	167,068	294	66,873	0.25	113,235
Dec-86	227,827	221	68,468	0.23	144,923
Jan-87	141,705	372	71,687	0.32	122,630
Feb-87	118,603	501	80,758	0.57	184,891
Mar-87	209,901	474	135,366	0.51	290,316
Apr-87	170,558	372	86,178	0.46	213,556
May-87	133,872	384	69,835	0.30	109,158
Jun-87	118,385	442	71,169	0.41	130,791

italicized = estimated

Table A12: Core Data Set
San Joaquin River near Vernalis

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jul-87	100,320	471	64,254	0.53	145,618
Aug-87	100,003	508	69,075	0.51	139,914
Sep-87	94,986	481	62,130	0.40	104,003
Oct-87	84,198	503	57,621	0.34	78,938
Nov-87	92,091	546	68,396	0.54	136,210
Dec-87	78,566	590	63,061	0.47	99,369
Jan-88	91,139	679	84,185	0.69	171,539
Feb-88	79,875	824	89,476	0.92	200,800
Mar-88	137,739	537	100,604	0.64	239,688
Apr-88	127,646	446	77,477	0.44	154,387
May-88	109,501	454	67,591	0.45	133,980
Jun-88	101,787	462	63,916	0.50	138,384
Jul-88	83,405	498	56,509	0.48	108,854
Aug-88	95,739	502	65,302	0.49	127,439
Sep-88	86,379	490	57,487	0.44	103,856
Oct-88	69,254	542	51,076	0.41	76,755
Nov-88	75,810	520	53,542	0.49	101,655
Dec-88	84,337	512	58,728	0.57	131,189
Jan-89	77,159	696	73,016	0.76	159,996
Feb-89	68,513	776	72,290	0.87	162,223
Mar-89	124,374	463	78,213	0.55	186,566
Apr-89	113,943	440	68,094	0.50	153,831
May-89	119,833	410	66,779	0.46	148,769
Jun-89	94,173	443	56,679	0.52	132,043
Jul-89	78,923	455	48,842	0.53	114,212
Aug-89	71,882	483	47,190	0.64	125,299
Sep-89	80,470	473	51,746	0.56	123,618
Oct-89	86,122	475	55,593	0.47	111,111
Nov-89	83,544	508	57,701	0.52	117,671
Dec-89	84,912	551	63,600	0.56	130,364
Jan-90	76,346	726	75,334	0.75	154,675
Feb-90	75,810	737	75,923	0.93	192,416
Mar-90	108,212	493	72,470	0.57	167,240
Apr-90	77,892	501	53,020	0.45	95,238
May-90	78,646	474	50,661	0.45	96,196
Jun-90	66,417	569	51,358	0.51	91,313
Jul-90	62,026	505	42,547	0.52	88,400
Aug-90	63,492	477	41,168	0.46	79,860
Sep-90	52,105	537	38,014	0.44	62,181
Oct-90	61,055	489	40,577	0.33	54,114
Nov-90	66,351	454	40,928	0.30	53,231
Dec-90	56,458	575	44,169	0.52	79,086
Jan-91	50,180	656	44,752	0.58	78,527

italicized = estimated

Table A12: Core Data Set
San Joaquin River near Vernalis

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Feb-91	42,079	688	39,364	0.61	69,790
Mar-91	109,355	516	76,678	0.48	141,634
Apr-91	69,494	665	62,818	0.86	162,603
May-91	64,477	389	34,123	0.31	54,362
Jun-91	33,802	544	24,986	0.46	42,223
Jul-91	36,517	517	25,671	0.41	40,838
Aug-91	33,035	550	24,700	0.44	39,537
Sep-91	34,151	553	25,685	0.44	40,535
Oct-91	48,470	466	30,732	0.38	50,178
Nov-91	64,487	375	32,879	0.29	51,349
Dec-91	55,004	529	39,527	0.43	64,931
Jan-92	58,968	582	46,629	0.60	96,456
Feb-92	120,233	433	70,759	0.42	138,317
Mar-92	90,345	654	80,381	0.78	192,566
Apr-92	84,377	455	52,217	0.50	115,403
May-92	54,806	340	25,332	0.32	47,969
Jun-92	28,589	437	16,965	0.47	36,552
Jul-92	27,461	516	19,271	0.43	32,063
Aug-92	29,684	500	20,181	0.39	31,792
Sep-92	37,752	454	23,284	0.36	36,663
Oct-92	52,171	420	29,794	0.32	44,942
Nov-92	56,853	418	32,328	0.37	56,784
Dec-92	60,337	498	40,890	0.60	97,963
Jan-93	253,269	278	95,653	0.31	216,682
Feb-93	168,535	475	108,831	0.52	237,294
Mar-93	166,116	597	134,780	0.66	296,946
Apr-93	203,495	389	107,680	0.37	206,878
May-93	221,918	276	83,394	0.26	154,258
Jun-93	139,266	357	67,533	0.36	135,447
Jul-93	92,804	494	62,363	0.50	126,104
Aug-93	122,847	340	56,799	0.37	124,954
Sep-93	164,847	247	55,333	0.20	91,486
Oct-93	186,918	207	52,551	0.17	84,742
Nov-93	104,643	468	66,540	0.43	121,021
Dec-93	100,082	491	66,799	0.50	136,057
Jan-94	108,986	488	72,270	0.49	145,014
Feb-94	110,334	476	71,412	0.59	177,256
Mar-94	135,598	472	87,000	0.70	259,838
Apr-94	110,810	399	60,080	0.33	98,884
May-94	121,260	384	63,353	0.35	114,120
Jun-94	65,955	503	45,077	0.52	93,499
Jul-94	69,796	430	40,829	0.44	83,657
Aug-94	53,303	475	34,411	0.49	71,316

italicized = estimated

Table A12: Core Data Set
San Joaquin River near Vernalis

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Sep-94	51,699	542	38,074	0.44	62,200
Oct-94	84,190	457	52,296	0.26	60,500
Nov-94	76,603	426	44,398	0.43	89,509
Dec-94	79,598	470	50,840	0.51	110,352
Jan-95	282,736	240	92,069	0.25	193,578
Feb-95	364,198	249	123,161	0.28	275,255
Mar-95	898,240	194	236,426	0.19	460,473
Apr-95	1,185,834	148	238,006	0.26	852,471
May-95	1,363,907	91	168,012	0.06	235,819
Jun-95	833,534	113	128,051	0.12	262,159
Jul-95	607,433	135	111,150	0.12	200,558
Aug-95	241,272	323	106,074	0.25	164,395
Sep-95	281,645	182	69,613	0.14	110,417
Oct-95	351,608	156	74,533	0.20	191,204
Nov-95	158,354	386	83,098	0.35	148,545
Dec-95	155,033	450	94,772	0.44	183,368
Jan-96	165,085	454	101,842	0.42	187,401
Feb-96	616,320	166	139,057	0.20	329,569
Mar-96	889,332	136	164,793	0.12	290,171
Apr-96	429,270	209	121,719	0.17	195,503
May-96	512,661	129	89,703	0.11	147,756
Jun-96	236,197	322	103,305	0.34	218,355
Jul-96	152,134	403	83,428	0.45	187,177
Aug-96	143,371	369	71,965	0.36	138,778
Sep-96	143,756	329	64,290	0.27	104,558
Oct-96	165,402	266	59,843	0.22	97,141
Nov-96	161,515	337	74,094	0.32	138,335
Dec-96	749,455	121	122,939	0.09	192,569
Jan-97	2,740,109	91	338,030	0.10	722,685
Feb-97	2,185,068	97	286,697	0.10	573,326
Mar-97	801,271	176	192,001	0.23	490,197
Apr-97	281,289	303	116,037	0.31	235,183
May-97	294,138	244	97,508	0.23	183,945
Jun-97	157,470	361	77,225	0.31	134,157
Jul-97	107,935	394	57,821	0.36	106,238
Aug-97	115,232	366	57,350	0.34	105,744
Sep-97	123,105	362	60,628	0.27	89,538

italicized = estimated

Table A13: Core Data Set
Merced River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	8,720	162	1,920	<i>0.030</i>	711
Nov-76	9,430	125	1,603	<i>0.030</i>	769
Dec-76	12,030	106	1,734	<i>0.030</i>	981
Jan-77	10,590	126	1,814	<i>0.030</i>	864
Feb-77	6,730	160	1,464	<i>0.030</i>	549
Mar-77	5,800	181	1,427	<i>0.030</i>	473
Apr-77	4,110	192	1,073	<i>0.030</i>	335
May-77	4,000	186	1,011	<i>0.030</i>	326
Jun-77	1,140	246	381	<i>0.030</i>	93
Jul-77	1,000	247	336	<i>0.030</i>	82
Aug-77	548	266	198	<i>0.030</i>	45
Sep-77	670	309	281	<i>0.030</i>	55
Oct-77	699	298	283	<i>0.030</i>	57
Nov-77	7,220	120	1,178	<i>0.030</i>	589
Dec-77	11,250	84	1,285	<i>0.030</i>	918
Jan-78	21,410	106	3,085	<i>0.030</i>	1,746
Feb-78	36,910	114	5,720	<i>0.030</i>	3,011
Mar-78	70,810	86	8,279	<i>0.015</i>	2,888
Apr-78	133,000	54	9,764	<i>0.015</i>	5,424
May-78	99,790	53	7,190	<i>0.015</i>	4,070
Jun-78	76,710	44	4,589	<i>0.015</i>	3,129
Jul-78	13,730	110	2,053	<i>0.030</i>	1,120
Aug-78	17,010	115	2,659	<i>0.030</i>	1,388
Sep-78	64,840	103	9,079	<i>0.015</i>	2,644
Oct-78	90,310	30	3,683	<i>0.015</i>	3,683
Nov-78	69,330	69	6,504	<i>0.015</i>	2,828
Dec-78	28,060	131	4,997	<i>0.030</i>	2,289
Jan-79	38,360	67	3,494	<i>0.030</i>	3,129
Feb-79	74,180	67	6,757	<i>0.015</i>	3,025
Mar-79	117,400	53	8,459	<i>0.015</i>	4,788
Apr-79	26,610	103	3,726	<i>0.030</i>	2,171
May-79	29,120	111	4,394	<i>0.030</i>	2,375
Jun-79	31,200	81	3,436	<i>0.030</i>	2,545
Jul-79	14,190	105	2,026	<i>0.030</i>	1,157
Aug-79	13,650	95	1,763	<i>0.030</i>	1,113
Sep-79	21,870	76	2,260	<i>0.030</i>	1,784
Oct-79	33,570	68	3,103	<i>0.030</i>	2,738
Nov-79	26,070	59	2,091	<i>0.030</i>	2,127
Dec-79	27,130	60	2,213	<i>0.030</i>	2,213
Jan-80	178,600	76	18,453	<i>0.015</i>	7,284
Feb-80	155,800	50	10,591	<i>0.015</i>	6,354
Mar-80	252,500	41	14,074	<i>0.015</i>	10,298
Apr-80	93,220	46	5,830	<i>0.015</i>	3,802

italicized = estimated

Table A13: Core Data Set
Merced River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
May-80	90,670	41	5,054	<i>0.015</i>	3,698
Jun-80	39,440	71	3,807	<i>0.030</i>	3,217
Jul-80	18,970	98	2,527	<i>0.030</i>	1,547
Aug-80	23,680	71	2,286	<i>0.030</i>	1,932
Sep-80	53,590	37	2,696	<i>0.015</i>	2,186
Oct-80	44,270	35	2,106	<i>0.015</i>	1,806
Nov-80	33,830	43	1,978	<i>0.030</i>	2,760
Dec-80	32,690	70	3,111	<i>0.030</i>	2,667
Jan-81	24,060	95	3,107	<i>0.030</i>	1,963
Feb-81	16,710	99	2,249	<i>0.030</i>	1,363
Mar-81	22,670	107	3,298	<i>0.030</i>	1,849
Apr-81	15,380	112	2,342	<i>0.030</i>	1,255
May-81	15,400	101	2,115	<i>0.030</i>	1,256
Jun-81	10,700	111	1,615	<i>0.030</i>	873
Jul-81	9,280	135	1,703	<i>0.030</i>	757
Aug-81	10,050	110	1,503	<i>0.030</i>	820
Sep-81	10,380	110	1,552	<i>0.030</i>	847
Oct-81	10,290	127	1,777	<i>0.030</i>	839
Nov-81	14,710	99	1,980	<i>0.030</i>	1,200
Dec-81	15,310	104	2,165	<i>0.030</i>	1,249
Jan-82	21,410	119	3,464	<i>0.030</i>	1,746
Feb-82	70,240	72	6,875	<i>0.015</i>	2,865
Mar-82	120,500	49	8,027	<i>0.015</i>	4,915
Apr-82	276,500	46	17,291	<i>0.015</i>	11,277
May-82	245,800	59	19,716	<i>0.015</i>	10,025
Jun-82	84,270	73	8,363	<i>0.015</i>	3,437
Jul-82	62,980	86	7,363	<i>0.015</i>	2,569
Aug-82	31,040	118	4,979	<i>0.030</i>	2,532
Sep-82	47,490	59	3,809	<i>0.015</i>	1,937
Oct-82	107,500	34	4,969	<i>0.015</i>	4,384
Nov-82	70,430	106	10,149	<i>0.015</i>	2,872
Dec-82	148,900	61	12,348	<i>0.015</i>	6,073
Jan-83	173,800	52	12,287	<i>0.015</i>	7,088
Feb-83	260,700	43	15,240	<i>0.015</i>	10,633
Mar-83	336,900	47	21,527	<i>0.015</i>	13,740
Apr-83	294,500	45	18,017	<i>0.015</i>	12,011
May-83	224,900	49	14,982	<i>0.015</i>	9,173
Jun-83	270,500	27	9,929	<i>0.015</i>	11,032
Jul-83	220,900	36	10,811	<i>0.015</i>	9,009
Aug-83	73,270	50	4,981	<i>0.015</i>	2,988
Sep-83	102,100	44	6,107	<i>0.015</i>	4,164
Oct-83	168,400	31	7,097	<i>0.015</i>	6,868
Nov-83	44,010	111	6,641	<i>0.015</i>	1,795

italicized = estimated

Table A13: Core Data Set
Merced River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Dec-83	148,600	51	10,303	<i>0.015</i>	6,061
Jan-84	198,200	48	12,934	<i>0.015</i>	8,084
Feb-84	71,410	76	7,378	<i>0.015</i>	2,912
Mar-84	37,820	109	5,604	<i>0.030</i>	3,085
Apr-84	26,910	113	4,134	<i>0.030</i>	2,195
May-84	24,510	111	3,699	<i>0.030</i>	1,999
Jun-84	22,290	137	4,152	<i>0.030</i>	1,818
Jul-84	18,230	101	2,503	<i>0.030</i>	1,487
Aug-84	17,010	93	2,151	<i>0.030</i>	1,388
Sep-84	17,980	95	2,322	<i>0.030</i>	1,467
Oct-84	27,480	115	4,296	<i>0.030</i>	2,242
Nov-84	32,350	104	4,574	<i>0.030</i>	2,639
Dec-84	71,930	44	4,303	<i>0.015</i>	2,934
Jan-85	41,790	106	6,022	<i>0.015</i>	1,704
Feb-85	17,770	103	2,488	<i>0.030</i>	1,449
Mar-85	19,250	105	2,748	<i>0.030</i>	1,570
Apr-85	17,770	103	2,488	<i>0.030</i>	1,449
May-85	17,800	102	2,468	<i>0.030</i>	1,452
Jun-85	15,070	145	2,971	<i>0.030</i>	1,229
Jul-85	13,520	139	2,555	<i>0.030</i>	1,103
Aug-85	11,890	109	1,762	<i>0.030</i>	970
Sep-85	13,530	122	2,244	<i>0.030</i>	1,104
Oct-85	15,820	117	2,516	<i>0.030</i>	1,290
Nov-85	14,120	111	2,131	<i>0.030</i>	1,152
Dec-85	18,850	170	4,357	<i>0.030</i>	1,538
Jan-86	12,970	137	2,416	<i>0.030</i>	1,058
Feb-86	25,360	87	2,999	<i>0.030</i>	2,069
Mar-86	182,200	41	10,156	<i>0.015</i>	7,431
Apr-86	158,600	32	6,900	<i>0.015</i>	6,469
May-86	104,400	36	5,110	<i>0.015</i>	4,258
Jun-86	39,880	60	3,253	<i>0.015</i>	1,627
Jul-86	16,760	144	3,281	<i>0.030</i>	1,367
Aug-86	15,620	146	3,100	<i>0.030</i>	1,274
Sep-86	18,730	110	2,801	<i>0.030</i>	1,528
Oct-86	27,790	69	2,607	<i>0.030</i>	2,267
Nov-86	14,700	121	2,418	<i>0.030</i>	1,199
Dec-86	14,060	118	2,256	<i>0.030</i>	1,147
Jan-87	14,180	131	2,525	<i>0.030</i>	1,157
Feb-87	13,130	119	2,124	<i>0.030</i>	1,071
Mar-87	18,080	98	2,409	<i>0.030</i>	1,475
Apr-87	10,820	198	2,913	<i>0.030</i>	883
May-87	11,980	157	2,557	<i>0.030</i>	977
Jun-87	10,060	130	1,778	<i>0.030</i>	821

italicized = estimated

Table A13: Core Data Set
Merced River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jul-87	7,620	92	953	<i>0.030</i>	622
Aug-87	7,680	153	1,597	<i>0.030</i>	626
Sep-87	9,030	165	2,026	<i>0.030</i>	737
Oct-87	6,420	175	1,527	<i>0.030</i>	524
Nov-87	11,780	201	3,219	<i>0.030</i>	961
Dec-87	13,360	192	3,487	<i>0.030</i>	1,090
Jan-88	15,280	107	2,223	<i>0.030</i>	1,246
Feb-88	12,420	108	1,824	<i>0.030</i>	1,013
Mar-88	11,640	130	2,057	<i>0.030</i>	949
Apr-88	10,800	126	1,850	<i>0.030</i>	881
May-88	10,900	157	2,327	<i>0.030</i>	889
Jun-88	7,710	200	2,096	<i>0.030</i>	629
Jul-88	3,790	205	1,056	<i>0.030</i>	309
Aug-88	4,230	113	650	<i>0.030</i>	345
Sep-88	2,130	226	654	<i>0.030</i>	174
Oct-88	2,330	343	1,086	<i>0.030</i>	190
Nov-88	8,080	140	1,538	<i>0.030</i>	659
Dec-88	11,960	139	2,260	<i>0.030</i>	976
Jan-89	12,350	163	2,737	<i>0.030</i>	1,007
Feb-89	11,360	167	2,579	<i>0.030</i>	927
Mar-89	18,960	205	5,284	<i>0.030</i>	1,547
Apr-89	11,760	219	3,501	<i>0.030</i>	959
May-89	9,630	229	2,998	<i>0.030</i>	786
Jun-89	6,540	225	2,001	<i>0.030</i>	533
Jul-89	2,110	330	947	<i>0.030</i>	172
Aug-89	1,470	376	751	<i>0.030</i>	120
Sep-89	3,030	294	1,211	<i>0.030</i>	247
Oct-89	5,080	211	1,457	<i>0.030</i>	414
Nov-89	10,300	294	4,117	<i>0.030</i>	840
Dec-89	11,670	226	3,586	<i>0.030</i>	952
Jan-90	11,930	177	2,871	<i>0.030</i>	973
Feb-90	13,590	153	2,827	<i>0.030</i>	1,109
Mar-90	10,220	209	2,904	<i>0.030</i>	834
Apr-90	8,250	218	2,445	<i>0.030</i>	673
May-90	7,870	152	1,626	<i>0.030</i>	642
Jun-90	5,970	168	1,364	<i>0.030</i>	487
Jul-90	1,700	203	469	<i>0.030</i>	139
Aug-90	1,170	240	382	<i>0.030</i>	95
Sep-90	1,470	287	574	<i>0.030</i>	120
Oct-90	1,825	419	1,040	<i>0.030</i>	149
Nov-90	7,540	319	3,270	<i>0.030</i>	615
Dec-90	10,151	119	1,642	<i>0.030</i>	828
Jan-91	7,811	111	1,179	<i>0.030</i>	637

italicized = estimated

Table A13: Core Data Set
Merced River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Feb-91	3,598	160	783	<i>0.030</i>	293
Mar-91	19,676	88	2,354	<i>0.030</i>	1,605
Apr-91	7,810	100	1,062	<i>0.030</i>	637
May-91	5,774	187	1,468	<i>0.030</i>	471
Jun-91	1,447	338	665	<i>0.030</i>	118
Jul-91	371	368	186	<i>0.030</i>	30
Aug-91	1,011	219	301	<i>0.030</i>	82
Sep-91	4,242	235	1,355	<i>0.030</i>	346
Oct-91	4,266	194	1,125	<i>0.030</i>	348
Nov-91	12,222	219	3,639	<i>0.030</i>	997
Dec-91	13,644	426	7,902	<i>0.030</i>	1,113
Jan-92	13,928	67	1,269	<i>0.030</i>	1,136
Feb-92	17,795	64	1,548	<i>0.030</i>	1,452
Mar-92	16,691	121	2,746	<i>0.030</i>	1,361
Apr-92	9,354	56	712	<i>0.030</i>	763
May-92	5,609	154	1,174	<i>0.030</i>	458
Jun-92	3,552	229	1,106	<i>0.030</i>	290
Jul-92	2,063	308	864	<i>0.030</i>	168
Aug-92	2,348	246	785	<i>0.030</i>	192
Sep-92	2,471	118	396	<i>0.030</i>	202
Oct-92	10,635	33	477	<i>0.030</i>	867
Nov-92	14,888	54	1,093	<i>0.030</i>	1,214
Dec-92	12,670	69	1,189	<i>0.030</i>	1,033
Jan-93	35,689	78	3,784	<i>0.030</i>	2,911
Feb-93	21,166	101	2,906	<i>0.030</i>	1,727
Mar-93	21,386	107	3,111	<i>0.030</i>	1,744
Apr-93	60,270	63	5,162	<i>0.015</i>	2,458
May-93	56,011	59	4,493	<i>0.015</i>	2,284
Jun-93	35,316	69	3,313	<i>0.030</i>	2,881
Jul-93	22,294	70	2,122	<i>0.030</i>	1,819
Aug-93	36,817	44	2,202	<i>0.030</i>	3,003
Sep-93	35,566	45	2,176	<i>0.030</i>	2,901
Oct-93	51,914	31	2,188	<i>0.015</i>	2,117
Nov-93	14,765	99	1,987	<i>0.030</i>	1,204
Dec-93	13,922	84	1,590	<i>0.030</i>	1,136
Jan-94	14,757	80	1,605	<i>0.030</i>	1,204
Feb-94	17,947	79	1,928	<i>0.030</i>	1,464
Mar-94	15,215	82	1,696	<i>0.030</i>	1,241
Apr-94	21,561	69	2,023	<i>0.030</i>	1,759
May-94	25,726	60	2,098	<i>0.030</i>	2,098
Jun-94	10,487	130	1,853	<i>0.030</i>	855
Jul-94	19,081	63	1,634	<i>0.030</i>	1,556
Aug-94	5,683	153	1,182	<i>0.030</i>	464

italicized = estimated

Table A13: Core Data Set
Merced River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Sep-94	4,880	189	1,254	<i>0.030</i>	398
Oct-94	20,875	<i>100</i>	2,850	<i>0.030</i>	1,703
Nov-94	13,159	<i>120</i>	2,146	<i>0.030</i>	1,073
Dec-94	12,774	<i>121</i>	2,107	<i>0.030</i>	1,042
Jan-95	36,541	<i>81</i>	4,021	<i>0.030</i>	2,981
Feb-95	14,617	<i>115</i>	2,289	<i>0.030</i>	1,192
Mar-95	155,045	<i>46</i>	9,780	<i>0.015</i>	6,324
Apr-95	195,306	<i>42</i>	11,272	<i>0.015</i>	7,966
May-95	226,578	<i>40</i>	12,350	<i>0.015</i>	9,241
Jun-95	188,762	<i>43</i>	11,038	<i>0.015</i>	7,699
Jul-95	151,900	<i>47</i>	9,658	<i>0.015</i>	6,195
Aug-95	30,223	<i>87</i>	3,578	<i>0.030</i>	2,465
Sep-95	37,175	<i>80</i>	4,064	<i>0.030</i>	3,032
Oct-95	109,095	<i>53</i>	7,879	<i>0.015</i>	4,449
Nov-95	24,599	<i>94</i>	3,152	<i>0.030</i>	2,007
Dec-95	24,813	<i>94</i>	3,169	<i>0.030</i>	2,024
Jan-96	21,305	<i>100</i>	2,886	<i>0.030</i>	1,738
Feb-96	144,343	<i>48</i>	9,359	<i>0.015</i>	5,887
Mar-96	175,793	<i>44</i>	10,566	<i>0.015</i>	7,170
Apr-96	52,226	<i>71</i>	5,009	<i>0.015</i>	2,130
May-96	74,642	<i>61</i>	6,239	<i>0.015</i>	3,044
Jun-96	15,110	<i>114</i>	2,336	<i>0.030</i>	1,233
Jul-96	5,394	<i>169</i>	1,240	<i>0.030</i>	440
Aug-96	3,918	<i>191</i>	1,018	<i>0.030</i>	320
Sep-96	5,674	<i>166</i>	1,279	<i>0.030</i>	463
Oct-96	25,517	156	5,394	<i>0.030</i>	2,081
Nov-96	15,513	163	3,443	<i>0.030</i>	1,265
Dec-96	127,188	40	6,867	<i>0.015</i>	5,187
Jan-97	430,351	29	17,077	<i>0.015</i>	17,552
Feb-97	371,694	37	18,769	<i>0.015</i>	15,160
Mar-97	96,624	64	8,403	<i>0.015</i>	3,941
Apr-97	38,526	141	7,388	<i>0.030</i>	3,143
May-97	35,847	110	5,364	<i>0.030</i>	2,924
Jun-97	5,591	375	2,849	<i>0.030</i>	456
Jul-97	5,167	233	1,636	<i>0.030</i>	421
Aug-97	3,925	233	1,244	<i>0.030</i>	320
Sep-97	5,470	191	1,418	<i>0.030</i>	446

italicized = estimated

Table A14: Core Data Set
Stanislaus River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	5,554	245	1,850	<i>0.030</i>	453
Nov-76	4,429	248	1,493	<i>0.030</i>	361
Dec-76	5,379	278	2,033	<i>0.030</i>	439
Jan-77	5,153	239	1,674	<i>0.030</i>	420
Feb-77	3,876	234	1,233	<i>0.030</i>	316
Mar-77	4,068	200	1,106	<i>0.030</i>	332
Apr-77	3,074	185	773	<i>0.030</i>	251
May-77	3,792	182	938	<i>0.030</i>	309
Jun-77	2,947	187	749	<i>0.030</i>	240
Jul-77	1,444	181	355	<i>0.030</i>	118
Aug-77	1,348	177	324	<i>0.030</i>	110
Sep-77	834	216	245	<i>0.030</i>	68
Oct-77	801	292	318	<i>0.030</i>	65
Nov-77	1,254	264	450	<i>0.030</i>	102
Dec-77	1,636	263	585	<i>0.030</i>	133
Jan-78	25,420	180	6,221	<i>0.030</i>	2,074
Feb-78	87,390	76	9,029	<i>0.015</i>	3,564
Mar-78	186,700	68	17,260	<i>0.015</i>	7,615
Apr-78	202,300	54	14,851	<i>0.015</i>	8,251
May-78	225,700	45	13,808	<i>0.015</i>	9,205
Jun-78	158,300	41	8,824	<i>0.015</i>	6,456
Jul-78	34,560	88	4,135	<i>0.030</i>	2,819
Aug-78	15,160	107	2,205	<i>0.030</i>	1,237
Sep-78	17,280	97	2,279	<i>0.030</i>	1,410
Oct-78	17,020	111	2,568	<i>0.030</i>	1,388
Nov-78	16,020	115	2,505	<i>0.030</i>	1,307
Dec-78	26,780	74	2,694	<i>0.030</i>	2,184
Jan-79	81,830	70	7,787	<i>0.015</i>	3,337
Feb-79	99,180	82	11,056	<i>0.015</i>	4,045
Mar-79	132,000	76	13,639	<i>0.015</i>	5,384
Apr-79	35,120	115	5,491	<i>0.030</i>	2,865
May-79	70,450	101	9,673	<i>0.015</i>	2,873
Jun-79	51,920	79	5,576	<i>0.030</i>	4,235
Jul-79	15,760	113	2,421	<i>0.030</i>	1,286
Aug-79	15,820	109	2,344	<i>0.030</i>	1,290
Sep-79	14,270	110	2,134	<i>0.030</i>	1,164
Oct-79	17,670	112	2,691	<i>0.030</i>	1,441
Nov-79	14,560	128	2,534	<i>0.030</i>	1,188
Dec-79	27,060	105	3,863	<i>0.030</i>	2,207
Jan-80	203,300	68	18,794	<i>0.015</i>	8,292
Feb-80	183,200	57	14,196	<i>0.015</i>	7,472
Mar-80	153,000	83	17,264	<i>0.015</i>	6,240

italicized = estimated

Table A14: Core Data Set
Stanislaus River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Apr-80	228,400	47	14,594	<i>0.015</i>	9,315
May-80	242,400	39	12,852	<i>0.015</i>	9,886
Jun-80	65,460	85	7,564	<i>0.030</i>	5,340
Jul-80	72,060	57	5,584	<i>0.015</i>	2,939
Aug-80	21,680	101	2,977	<i>0.030</i>	1,768
Sep-80	28,720	82	3,202	<i>0.030</i>	2,343
Oct-80	28,000	92	3,502	<i>0.030</i>	2,284
Nov-80	20,770	89	2,513	<i>0.030</i>	1,694
Dec-80	13,770	141	2,640	<i>0.030</i>	1,123
Jan-81	15,710	135	2,883	<i>0.030</i>	1,281
Feb-81	12,130	153	2,523	<i>0.030</i>	989
Mar-81	21,600	112	3,289	<i>0.030</i>	1,762
Apr-81	62,370	74	6,275	<i>0.030</i>	5,088
May-81	45,590	71	4,401	<i>0.030</i>	3,719
Jun-81	32,290	64	2,809	<i>0.030</i>	2,634
Jul-81	24,080	80	2,619	<i>0.030</i>	1,964
Aug-81	26,680	64	2,321	<i>0.030</i>	2,176
Sep-81	16,800	102	2,330	<i>0.030</i>	1,370
Oct-81	16,575	119	2,682	<i>0.030</i>	1,352
Nov-81	17,393	107	2,530	<i>0.030</i>	1,419
Dec-81	14,657	134	2,670	<i>0.030</i>	1,196
Jan-82	36,245	122	6,012	<i>0.030</i>	2,957
Feb-82	61,271	94	7,830	<i>0.030</i>	4,998
Mar-82	81,480	72	7,976	<i>0.015</i>	3,323
Apr-82	46,752	110	6,992	<i>0.030</i>	3,814
May-82	27,631	107	4,019	<i>0.030</i>	2,254
Jun-82	80,330	60	6,553	<i>0.015</i>	3,276
Jul-82	80,945	56	6,163	<i>0.015</i>	3,301
Aug-82	88,561	64	7,706	<i>0.015</i>	3,612
Sep-82	81,500	60	6,648	<i>0.015</i>	3,324
Oct-82	79,300	54	5,822	<i>0.015</i>	3,234
Nov-82	79,890	56	6,082	<i>0.015</i>	3,258
Dec-82	81,140	73	8,053	<i>0.015</i>	3,309
Jan-83	84,430	101	11,593	<i>0.015</i>	3,443
Feb-83	60,270	122	9,996	<i>0.030</i>	4,916
Mar-83	210,600	75	21,473	<i>0.015</i>	8,589
Apr-83	309,900	51	21,487	<i>0.015</i>	12,639
May-83	262,950	52	18,589	<i>0.015</i>	10,724
Jun-83	196,500	49	13,090	<i>0.015</i>	8,014
Jul-83	225,700	45	13,808	<i>0.015</i>	9,205
Aug-83	172,840	49	11,514	<i>0.015</i>	7,049
Sep-83	113,790	56	8,663	<i>0.015</i>	4,641
Oct-83	111,260	65	9,832	<i>0.015</i>	4,538

italicized = estimated

Table A14: Core Data Set
Stanislaus River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Nov-83	137,310	79	14,747	<i>0.015</i>	5,600
Dec-83	311,010	54	22,832	<i>0.015</i>	12,685
Jan-84	299,400	50	20,352	<i>0.015</i>	12,211
Feb-84	101,610	66	9,117	<i>0.015</i>	4,144
Mar-84	89,290	83	10,075	<i>0.015</i>	3,642
Apr-84	56,760	91	7,022	<i>0.030</i>	4,630
May-84	57,780	88	6,913	<i>0.030</i>	4,713
Jun-84	33,650	116	5,307	<i>0.030</i>	2,745
Jul-84	31,260	93	3,952	<i>0.030</i>	2,550
Aug-84	37,100	78	3,934	<i>0.030</i>	3,026
Sep-84	52,100	64	4,533	<i>0.030</i>	4,250
Oct-84	53,806	81	5,925	<i>0.030</i>	4,389
Nov-84	23,738	121	3,905	<i>0.030</i>	1,936
Dec-84	46,992	118	7,539	<i>0.030</i>	3,833
Jan-85	62,876	98	8,377	<i>0.030</i>	5,129
Feb-85	40,762	97	5,375	<i>0.030</i>	3,325
Mar-85	38,612	92	4,829	<i>0.030</i>	3,150
Apr-85	51,209	78	5,430	<i>0.030</i>	4,177
May-85	45,217	91	5,594	<i>0.030</i>	3,688
Jun-85	38,132	80	4,147	<i>0.030</i>	3,110
Jul-85	86,598	56	6,593	<i>0.015</i>	3,532
Aug-85	79,777	53	5,748	<i>0.015</i>	3,254
Sep-85	31,210	79	3,352	<i>0.030</i>	2,546
Oct-85	28,116	90	3,440	<i>0.030</i>	2,293
Nov-85	24,918	67	2,270	<i>0.030</i>	2,033
Dec-85	27,481	74	2,765	<i>0.030</i>	2,242
Jan-86	28,796	86	3,367	<i>0.030</i>	2,349
Feb-86	93,552	80	10,175	<i>0.015</i>	3,816
Mar-86	286,790	48	18,715	<i>0.015</i>	11,697
Apr-86	119,544	42	6,826	<i>0.015</i>	4,876
May-86	83,048	50	5,645	<i>0.015</i>	3,387
Jun-86	79,557	50	5,408	<i>0.015</i>	3,245
Jul-86	55,490	69	5,205	<i>0.030</i>	4,526
Aug-86	81,433	64	7,085	<i>0.015</i>	3,321
Sep-86	89,177	59	7,153	<i>0.015</i>	3,637
Oct-86	45,283	93	5,725	<i>0.030</i>	3,694
Nov-86	31,426	80	3,418	<i>0.030</i>	2,563
Dec-86	55,250	60	4,507	<i>0.030</i>	4,507
Jan-87	38,577	71	3,724	<i>0.030</i>	3,147
Feb-87	45,451	58	3,584	<i>0.030</i>	3,707
Mar-87	71,911	59	5,768	<i>0.015</i>	2,933
Apr-87	66,331	65	5,862	<i>0.015</i>	2,705
May-87	49,380	71	4,766	<i>0.030</i>	4,028

italicized = estimated

Table A14: Core Data Set
Stanislaus River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jun-87	50,729	63	4,345	<i>0.030</i>	4,138
Jul-87	37,478	74	3,770	<i>0.030</i>	3,057
Aug-87	32,692	80	3,556	<i>0.030</i>	2,667
Sep-87	27,461	80	2,987	<i>0.030</i>	2,240
Oct-87	17,508	107	2,547	<i>0.030</i>	1,428
Nov-87	18,331	94	2,343	<i>0.030</i>	1,495
Dec-87	14,188	120	2,315	<i>0.030</i>	1,157
Jan-88	13,450	138	2,523	<i>0.030</i>	1,097
Feb-88	13,793	124	2,325	<i>0.030</i>	1,125
Mar-88	70,022	57	5,426	<i>0.015</i>	2,856
Apr-88	53,399	59	4,283	<i>0.030</i>	4,356
May-88	55,020	60	4,488	<i>0.030</i>	4,488
Jun-88	54,012	62	4,553	<i>0.030</i>	4,406
Jul-88	45,433	67	4,138	<i>0.030</i>	3,706
Aug-88	47,580	64	4,140	<i>0.030</i>	3,881
Sep-88	42,817	65	3,784	<i>0.030</i>	3,493
Oct-88	28,719	56	2,186	<i>0.030</i>	2,343
Nov-88	25,968	56	1,977	<i>0.030</i>	2,118
Dec-88	27,398	61	2,272	<i>0.030</i>	2,235
Jan-89	15,921	80	1,732	<i>0.030</i>	1,299
Feb-89	12,488	36	611	<i>0.030</i>	1,019
Mar-89	63,888	51	4,430	<i>0.030</i>	5,211
Apr-89	54,292	52	3,838	<i>0.030</i>	4,429
May-89	65,193	57	5,052	<i>0.030</i>	5,318
Jun-89	50,136	48	3,272	<i>0.030</i>	4,090
Jul-89	39,477	66	3,542	<i>0.030</i>	3,220
Aug-89	25,936	55	1,939	<i>0.030</i>	2,116
Sep-89	26,803	56	2,041	<i>0.030</i>	2,186
Oct-89	18,760	81	2,066	<i>0.030</i>	1,530
Nov-89	14,140	89	1,711	<i>0.030</i>	1,153
Dec-89	13,070	96	1,706	<i>0.030</i>	1,066
Jan-90	11,310	112	1,722	<i>0.030</i>	923
Feb-90	10,910	114	1,691	<i>0.030</i>	890
Mar-90	51,150	65	4,520	<i>0.030</i>	4,172
Apr-90	32,590	65	2,880	<i>0.030</i>	2,658
May-90	33,920	64	2,951	<i>0.030</i>	2,767
Jun-90	35,790	60	2,919	<i>0.030</i>	2,919
Jul-90	37,380	56	2,846	<i>0.030</i>	3,049
Aug-90	32,770	59	2,628	<i>0.030</i>	2,673
Sep-90	19,120	73	1,898	<i>0.030</i>	1,560
Oct-90	21,640	69	2,030	<i>0.030</i>	1,765
Nov-90	23,820	64	2,073	<i>0.030</i>	1,943
Dec-90	12,600	96	1,644	<i>0.030</i>	1,028

italicized = estimated

Table A14: Core Data Set
Stanislaus River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jan-91	11,640	102	1,614	<i>0.030</i>	949
Feb-91	10,560	99	1,421	<i>0.030</i>	861
Mar-91	16,010	110	2,394	<i>0.030</i>	1,306
Apr-91	13,860	110	2,073	<i>0.030</i>	1,131
May-91	24,110	81	2,655	<i>0.030</i>	1,967
Jun-91	14,980	99	2,016	<i>0.030</i>	1,222
Jul-91	19,990	61	1,658	<i>0.030</i>	1,631
Aug-91	15,090	75	1,539	<i>0.030</i>	1,231
Sep-91	15,060	79	1,617	<i>0.030</i>	1,228
Oct-91	19,980	52	1,412	<i>0.030</i>	1,630
Nov-91	22,760	58	1,795	<i>0.030</i>	1,857
Dec-91	11,610	80	1,263	<i>0.030</i>	947
Jan-92	10,990	85	1,270	<i>0.030</i>	896
Feb-92	19,550	95	2,525	<i>0.030</i>	1,595
Mar-92	17,120	70	1,629	<i>0.030</i>	1,396
Apr-92	43,100	53	3,106	<i>0.030</i>	3,516
May-92	22,480	55	1,681	<i>0.030</i>	1,834
Jun-92	15,920	54	1,169	<i>0.030</i>	1,299
Jul-92	15,560	53	1,121	<i>0.030</i>	1,269
Aug-92	16,550	52	1,170	<i>0.030</i>	1,350
Sep-92	19,580	53	1,411	<i>0.030</i>	1,597
Oct-92	21,970	56	1,673	<i>0.030</i>	1,792
Nov-92	13,280	69	1,246	<i>0.030</i>	1,083
Dec-92	13,580	72	1,329	<i>0.030</i>	1,108
Jan-93	38,770	86	4,533	<i>0.030</i>	3,162
Feb-93	17,710	111	2,673	<i>0.030</i>	1,445
Mar-93	21,770	114	3,374	<i>0.030</i>	1,776
Apr-93	30,010	84	3,427	<i>0.030</i>	2,448
May-93	86,800	53	6,254	<i>0.015</i>	3,540
Jun-93	36,500	53	2,630	<i>0.030</i>	2,977
Jul-93	25,270	49	1,683	<i>0.030</i>	2,061
Aug-93	24,170	57	1,873	<i>0.030</i>	1,972
Sep-93	27,070	51	1,877	<i>0.030</i>	2,208
Oct-93	40,580	56	3,089	<i>0.030</i>	3,310
Nov-93	19,650	69	1,843	<i>0.030</i>	1,603
Dec-93	19,420	72	1,901	<i>0.030</i>	1,584
Jan-94	19,790	86	2,314	<i>0.030</i>	1,614
Feb-94	17,830	111	2,691	<i>0.030</i>	1,454
Mar-94	56,860	114	8,812	<i>0.030</i>	4,638
Apr-94	33,680	84	3,846	<i>0.030</i>	2,747
May-94	37,160	53	2,678	<i>0.030</i>	3,031
Jun-94	31,380	53	2,261	<i>0.030</i>	2,560
Jul-94	32,720	49	2,180	<i>0.030</i>	2,669

italicized = estimated

Table A14: Core Data Set
Stanislaus River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Aug-94	26,700	57	2,069	<i>0.030</i>	2,178
Sep-94	20,450	51	1,418	<i>0.030</i>	1,668
Oct-94	26,265	<i>83</i>	2,958	<i>0.030</i>	2,142
Nov-94	18,376	<i>92</i>	2,289	<i>0.030</i>	1,499
Dec-94	19,061	<i>91</i>	2,350	<i>0.030</i>	1,555
Jan-95	43,305	<i>72</i>	4,235	<i>0.030</i>	3,532
Feb-95	20,984	<i>88</i>	2,518	<i>0.030</i>	1,712
Mar-95	47,243	<i>70</i>	4,508	<i>0.030</i>	3,854
Apr-95	54,485	<i>67</i>	4,994	<i>0.030</i>	4,444
May-95	90,762	<i>58</i>	7,203	<i>0.015</i>	3,702
Jun-95	41,724	<i>73</i>	4,124	<i>0.030</i>	3,403
Jul-95	28,422	<i>81</i>	3,131	<i>0.030</i>	2,318
Aug-95	25,097	<i>84</i>	2,863	<i>0.030</i>	2,047
Sep-95	26,130	<i>83</i>	2,947	<i>0.030</i>	2,131
Oct-95	34,550	60	2,818	<i>0.030</i>	2,818
Nov-95	18,769	66	1,694	<i>0.030</i>	1,531
Dec-95	20,409	71	1,964	<i>0.030</i>	1,665
Jan-96	25,674	80	2,800	<i>0.030</i>	2,094
Feb-96	83,962	69	7,917	<i>0.015</i>	3,424
Mar-96	206,351	43	12,167	<i>0.015</i>	8,416
Apr-96	109,144	36	5,401	<i>0.015</i>	4,451
May-96	97,246	41	5,383	<i>0.015</i>	3,966
Jun-96	66,585	41	3,749	<i>0.015</i>	2,716
Jul-96	46,464	43	2,707	<i>0.030</i>	3,790
Aug-96	36,535	48	2,400	<i>0.030</i>	2,980
Sep-96	31,383	57	2,430	<i>0.030</i>	2,560
Oct-96	40,304	55	2,997	<i>0.030</i>	3,288
Nov-96	46,117	52	3,283	<i>0.030</i>	3,762
Dec-96	202,147	51	14,115	<i>0.015</i>	8,245
Jan-97	407,665	45	24,954	<i>0.015</i>	16,627
Feb-97	352,994	36	17,182	<i>0.015</i>	14,397
Mar-97	175,638	44	10,543	<i>0.015</i>	7,163
Apr-97	79,213	48	5,173	<i>0.015</i>	3,231
May-97	100,657	40	5,465	<i>0.015</i>	4,105
Jun-97	69,298	43	4,053	<i>0.015</i>	2,826
Jul-97	32,208	66	2,872	<i>0.030</i>	2,627
Aug-97	30,211	68	2,799	<i>0.030</i>	2,464
Sep-97	29,731	68	2,757	<i>0.030</i>	2,425

italicized = estimated

Table A15: Core Data Set
Tuolumne River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	18,470	341	8,562	<i>0.030</i>	1,507
Nov-76	21,630	294	8,645	<i>0.030</i>	1,764
Dec-76	21,080	329	9,429	<i>0.030</i>	1,719
Jan-77	17,560	371	8,857	<i>0.030</i>	1,432
Feb-77	15,440	385	8,081	<i>0.030</i>	1,259
Mar-77	21,620	359	10,552	<i>0.030</i>	1,764
Apr-77	10,060	526	7,194	<i>0.030</i>	821
May-77	8,510	600	6,942	<i>0.030</i>	694
Jun-77	5,620	691	5,280	<i>0.030</i>	458
Jul-77	4,850	720	4,747	<i>0.030</i>	396
Aug-77	4,150	722	4,073	<i>0.030</i>	339
Sep-77	4,320	652	3,829	<i>0.030</i>	352
Oct-77	4,810	391	2,557	<i>0.030</i>	392
Nov-77	5,540	355	2,674	<i>0.030</i>	452
Dec-77	6,750	356	3,267	<i>0.030</i>	551
Jan-78	17,890	244	5,934	<i>0.030</i>	1,459
Feb-78	23,340	212	6,727	<i>0.030</i>	1,904
Mar-78	38,470	140	7,322	<i>0.030</i>	3,138
Apr-78	89,540	72	8,765	<i>0.030</i>	7,304
May-78	200,100	43	11,698	<i>0.015</i>	8,161
Jun-78	30,730	149	6,225	<i>0.030</i>	2,507
Jul-78	13,900	243	4,592	<i>0.030</i>	1,134
Aug-78	14,220	225	4,350	<i>0.030</i>	1,160
Sep-78	25,940	187	6,595	<i>0.030</i>	2,116
Oct-78	43,330	110	6,480	<i>0.030</i>	3,534
Nov-78	73,450	83	8,288	<i>0.030</i>	5,991
Dec-78	72,960	61	6,051	<i>0.030</i>	5,951
Jan-79	177,200	73	17,586	<i>0.015</i>	7,227
Feb-79	202,000	40	10,985	<i>0.015</i>	8,239
Mar-79	222,400	49	14,815	<i>0.015</i>	9,071
Apr-79	68,340	92	8,548	<i>0.030</i>	5,574
May-79	15,100	249	5,112	<i>0.030</i>	1,232
Jun-79	14,160	233	4,485	<i>0.030</i>	1,155
Jul-79	21,060	198	5,669	<i>0.030</i>	1,718
Aug-79	21,970	186	5,555	<i>0.030</i>	1,792
Sep-79	25,920	161	5,673	<i>0.030</i>	2,114
Oct-79	72,620	64	6,319	<i>0.030</i>	5,924
Nov-79	64,210	73	6,372	<i>0.030</i>	5,238
Dec-79	74,890	84	8,552	<i>0.030</i>	6,109
Jan-80	305,100	54	22,398	<i>0.015</i>	12,444
Feb-80	322,200	52	22,778	<i>0.015</i>	13,141
Mar-80	359,400	39	19,056	<i>0.015</i>	14,658
Apr-80	153,500	56	11,686	<i>0.015</i>	6,260

italicized = estimated

Table A15: Core Data Set
Tuolumne River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
May-80	161,200	62	13,587	<i>0.015</i>	6,575
Jun-80	129,100	49	8,600	<i>0.015</i>	5,265
Jul-80	26,160	215	7,646	<i>0.030</i>	2,134
Aug-80	17,020	228	5,276	<i>0.030</i>	1,388
Sep-80	91,880	77	9,618	<i>0.030</i>	7,495
Oct-80	124,600	53	8,978	<i>0.015</i>	5,082
Nov-80	102,100	60	8,328	<i>0.015</i>	4,164
Dec-80	104,100	54	7,642	<i>0.015</i>	4,246
Jan-81	129,800	58	10,235	<i>0.015</i>	5,294
Feb-81	80,060	66	7,184	<i>0.030</i>	6,530
Mar-81	72,560	85	8,385	<i>0.030</i>	5,919
Apr-81	27,480	176	6,575	<i>0.030</i>	2,242
May-81	15,610	244	5,178	<i>0.030</i>	1,273
Jun-81	15,680	205	4,370	<i>0.030</i>	1,279
Jul-81	15,230	204	4,224	<i>0.030</i>	1,242
Aug-81	15,130	212	4,361	<i>0.030</i>	1,234
Sep-81	14,270	220	4,268	<i>0.030</i>	1,164
Oct-81	23,300	165	5,227	<i>0.030</i>	1,901
Nov-81	29,490	136	5,452	<i>0.030</i>	2,405
Dec-81	44,240	118	7,097	<i>0.030</i>	3,609
Jan-82	95,440	79	10,250	<i>0.015</i>	3,893
Feb-82	173,000	50	11,760	<i>0.015</i>	7,056
Mar-82	299,200	40	16,270	<i>0.015</i>	12,203
Apr-82	465,400	38	24,043	<i>0.015</i>	18,981
May-82	392,200	37	19,728	<i>0.015</i>	15,996
Jun-82	135,600	53	9,770	<i>0.015</i>	5,530
Jul-82	133,500	84	15,245	<i>0.015</i>	5,445
Aug-82	57,320	99	7,715	<i>0.030</i>	4,676
Sep-82	160,200	97	21,126	<i>0.015</i>	6,534
Oct-82	227,100	36	11,115	<i>0.015</i>	9,262
Nov-82	123,700	65	10,931	<i>0.015</i>	5,045
Dec-82	333,900	95	43,124	<i>0.015</i>	13,618
Jan-83	329,300	60	26,861	<i>0.015</i>	13,431
Feb-83	341,300	42	19,488	<i>0.015</i>	13,920
Mar-83	470,900	48	30,729	<i>0.015</i>	19,206
Apr-83	551,500	37	27,741	<i>0.015</i>	22,493
May-83	640,800	33	28,749	<i>0.015</i>	26,135
Jun-83	338,200	39	17,932	<i>0.015</i>	13,793
Jul-83	260,900	52	18,444	<i>0.015</i>	10,641
Aug-83	136,800	90	16,738	<i>0.015</i>	5,579
Sep-83	240,500	35	11,444	<i>0.015</i>	9,809
Oct-83	292,700	35	13,927	<i>0.015</i>	11,938
Nov-83	124,300	159	26,869	<i>0.015</i>	5,070

italicized = estimated

Table A15: Core Data Set
Tuolumne River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Dec-83	263,300	131	46,892	<i>0.015</i>	10,739
Jan-84	366,600	48	23,923	<i>0.015</i>	14,952
Feb-84	267,700	49	17,833	<i>0.015</i>	10,918
Mar-84	188,300	78	19,968	<i>0.015</i>	7,680
Apr-84	56,200	214	16,350	<i>0.030</i>	4,584
May-84	38,580	182	9,546	<i>0.030</i>	3,147
Jun-84	18,550	229	5,775	<i>0.030</i>	1,513
Jul-84	18,450	210	5,267	<i>0.030</i>	1,505
Aug-84	18,980	191	4,928	<i>0.030</i>	1,548
Sep-84	23,070	172	5,395	<i>0.030</i>	1,882
Oct-84	62,430	153	12,986	<i>0.030</i>	5,092
Nov-84	69,420	134	12,646	<i>0.030</i>	5,663
Dec-84	131,200	115	20,512	<i>0.015</i>	5,351
Jan-85	96,330	100	13,096	<i>0.015</i>	3,929
Feb-85	76,290	77	7,986	<i>0.030</i>	6,223
Mar-85	46,510	121	7,651	<i>0.030</i>	3,794
Apr-85	23,200	310	9,778	<i>0.030</i>	1,892
May-85	20,640	335	9,400	<i>0.030</i>	1,684
Jun-85	19,220	222	5,801	<i>0.030</i>	1,568
Jul-85	16,750	134	3,051	<i>0.030</i>	1,366
Aug-85	15,810	86	1,848	<i>0.030</i>	1,290
Sep-85	15,250	31	643	<i>0.030</i>	1,244
Oct-85	28,520	99	3,839	<i>0.030</i>	2,326
Nov-85	33,340	99	4,487	<i>0.030</i>	2,720
Dec-85	37,780	98	5,033	<i>0.030</i>	3,082
Jan-86	37,320	95	4,820	<i>0.030</i>	3,044
Feb-86	139,800	51	9,693	<i>0.015</i>	5,702
Mar-86	380,100	27	13,952	<i>0.015</i>	15,502
Apr-86	305,300	40	16,602	<i>0.015</i>	12,452
May-86	170,200	39	9,024	<i>0.015</i>	6,942
Jun-86	102,600	46	6,416	<i>0.015</i>	4,185
Jul-86	21,870	110	3,271	<i>0.030</i>	1,784
Aug-86	21,340	130	3,772	<i>0.030</i>	1,741
Sep-86	55,810	89	6,753	<i>0.030</i>	4,552
Oct-86	77,540	102	10,752	<i>0.030</i>	6,325
Nov-86	72,140	67	6,571	<i>0.030</i>	5,884
Dec-86	127,300	45	7,788	<i>0.015</i>	5,192
Jan-87	56,400	45	3,450	<i>0.030</i>	4,601
Feb-87	26,330	130	4,653	<i>0.030</i>	2,148
Mar-87	45,650	98	6,082	<i>0.030</i>	3,724
Apr-87	44,760	70	4,260	<i>0.030</i>	3,651
May-87	26,820	171	6,235	<i>0.030</i>	2,188
Jun-87	12,060	235	3,853	<i>0.030</i>	984

italicized = estimated

Table A15: Core Data Set
Tuolumne River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jul-87	10,730	211	3,078	<i>0.030</i>	875
Aug-87	12,030	189	3,091	<i>0.030</i>	981
Sep-87	10,860	227	3,351	<i>0.030</i>	886
Oct-87	16,560	160	3,602	<i>0.030</i>	1,351
Nov-87	18,130	128	3,155	<i>0.030</i>	1,479
Dec-87	18,520	142	3,575	<i>0.030</i>	1,511
Jan-88	18,450	152	3,813	<i>0.030</i>	1,505
Feb-88	13,240	164	2,952	<i>0.030</i>	1,080
Mar-88	14,680	161	3,213	<i>0.030</i>	1,197
Apr-88	22,020	117	3,503	<i>0.030</i>	1,796
May-88	8,840	187	2,247	<i>0.030</i>	721
Jun-88	6,670	179	1,623	<i>0.030</i>	544
Jul-88	5,980	201	1,634	<i>0.030</i>	488
Aug-88	6,410	239	2,083	<i>0.030</i>	523
Sep-88	6,580	228	2,040	<i>0.030</i>	537
Oct-88	8,280	<i>206</i>	2,322	<i>0.030</i>	675
Nov-88	9,650	<i>194</i>	2,539	<i>0.030</i>	787
Dec-88	11,400	151	2,340	<i>0.030</i>	930
Jan-89	11,390	153	2,369	<i>0.030</i>	929
Feb-89	9,440	147	1,887	<i>0.030</i>	770
Mar-89	16,010	129	2,808	<i>0.030</i>	1,306
Apr-89	21,250	85	2,456	<i>0.030</i>	1,733
May-89	10,380	136	1,919	<i>0.030</i>	847
Jun-89	8,390	207	2,361	<i>0.030</i>	684
Jul-89	8,480	<i>204</i>	,2355	<i>0.030</i>	692
Aug-89	8,840	135	1,622	<i>0.030</i>	721
Sep-89	10,210	<i>189</i>	2,624	<i>0.030</i>	833
Oct-89	15,120	115	2,364	<i>0.030</i>	1,233
Nov-89	17,760	90	2,173	<i>0.030</i>	1,449
Dec-89	16,350	98	2,178	<i>0.030</i>	1,334
Jan-90	15,010	108	2,204	<i>0.030</i>	1,224
Feb-90	14,780	118	2,371	<i>0.030</i>	1,206
Mar-90	16,070	120	2,622	<i>0.030</i>	1,311
Apr-90	16,110	108	2,365	<i>0.030</i>	1,314
May-90	14,270	88	1,707	<i>0.030</i>	1,164
Jun-90	7,110	192	1,856	<i>0.030</i>	580
Jul-90	7,260	183	1,806	<i>0.030</i>	592
Aug-90	8,350	164	1,862	<i>0.030</i>	681
Sep-90	8,780	163	1,946	<i>0.030</i>	716
Oct-90	11,558	131	2,058	<i>0.030</i>	943
Nov-90	11,408	126	1,954	<i>0.030</i>	931
Dec-90	10,582	132	1,899	<i>0.030</i>	863
Jan-91	9,548	139	1,804	<i>0.030</i>	779

italicized = estimated

Table A15: Core Data Set
Tuolumne River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Feb-91	8,619	138	1,617	<i>0.030</i>	703
Mar-91	22,629	118	3,630	<i>0.030</i>	1,846
Apr-91	22,863	50	1,554	<i>0.030</i>	1,865
May-91	26,085	77	2,731	<i>0.030</i>	2,128
Jun-91	7,741	164	1,726	<i>0.030</i>	631
Jul-91	3,001	173	706	<i>0.030</i>	245
Aug-91	6,954	169	1,598	<i>0.030</i>	567
Sep-91	6,864	201	1,876	<i>0.030</i>	560
Oct-91	9,574	161	2,096	<i>0.030</i>	781
Nov-91	11,919	115	1,863	<i>0.030</i>	972
Dec-91	11,203	125	1,904	<i>0.030</i>	914
Jan-92	11,915	117	1,895	<i>0.030</i>	972
Feb-92	25,696	55	1,921	<i>0.030</i>	2,096
Mar-92	15,780	80	1,716	<i>0.030</i>	1,287
Apr-92	18,988	114	2,943	<i>0.030</i>	1,549
May-92	21,794	140	4,148	<i>0.030</i>	1,778
Jun-92	6,585	195	1,746	<i>0.030</i>	537
Jul-92	5,972	195	1,583	<i>0.030</i>	487
Aug-92	5,950	205	1,658	<i>0.030</i>	485
Sep-92	7,016	196	1,869	<i>0.030</i>	572
Oct-92	9,890	165	2,219	<i>0.030</i>	807
Nov-92	12,426	151	2,551	<i>0.030</i>	1,014
Dec-92	12,516	237	4,033	<i>0.030</i>	1,021
Jan-93	46,282	152	9,564	<i>0.030</i>	3,775
Feb-93	24,972	108	3,667	<i>0.030</i>	2,037
Mar-93	18,101	143	3,519	<i>0.030</i>	1,476
Apr-93	49,053	52	3,468	<i>0.030</i>	4,001
May-93	45,128	88	5,399	<i>0.030</i>	3,681
Jun-93	28,536	55	2,134	<i>0.030</i>	2,328
Jul-93	19,795	208	5,598	<i>0.030</i>	1,615
Aug-93	30,424	192	7,941	<i>0.030</i>	2,482
Sep-93	59,389	100	8,074	<i>0.030</i>	4,844
Oct-93	45,672	100	6,209	<i>0.030</i>	3,725
Nov-93	23,461	77	2,456	<i>0.030</i>	1,914
Dec-93	27,035	74	2,720	<i>0.030</i>	2,205
Jan-94	38,327	72	3,752	<i>0.030</i>	3,126
Feb-94	23,124	95	2,987	<i>0.030</i>	1,886
Mar-94	19,819	89	2,398	<i>0.030</i>	1,617
Apr-94	31,000	63	2,655	<i>0.030</i>	2,529
May-94	27,099	40	1,474	<i>0.030</i>	2,210
Jun-94	8,485	55	634	<i>0.030</i>	692
Jul-94	7,081	154	1,482	<i>0.030</i>	578
Aug-94	7,692	156	1,631	<i>0.030</i>	627

italicized = estimated

Table A15: Core Data Set
Tuolumne River

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Sep-94	7,645	193	2,006	<i>0.030</i>	624
Oct-94	8,464	<i>206</i>	2,352	<i>0.030</i>	690
Nov-94	12,858	<i>194</i>	3,002	<i>0.030</i>	1,049
Dec-94	13,931	<i>206</i>	3,146	<i>0.030</i>	1,136
Jan-95	73,121	<i>194</i>	8,279	<i>0.030</i>	5,964
Feb-95	234,847	<i>206</i>	16,358	<i>0.015</i>	9,578
Mar-95	292,385	<i>194</i>	18,589	<i>0.015</i>	11,925
Apr-95	369,036	<i>206</i>	21,295	<i>0.015</i>	15,051
May-95	476,971	<i>194</i>	24,735	<i>0.015</i>	19,453
Jun-95	293,153	<i>206</i>	18,618	<i>0.015</i>	11,956
Jul-95	193,682	<i>194</i>	14,618	<i>0.015</i>	7,899
Aug-95	64,912	<i>206</i>	7,723	<i>0.030</i>	5,295
Sep-95	122,157	<i>194</i>	11,170	<i>0.015</i>	4,982
Oct-95	89,755	<i>206</i>	9,331	<i>0.030</i>	7,321
Nov-95	18,478	<i>194</i>	3,710	<i>0.030</i>	1,507
Dec-95	17,607	<i>206</i>	3,607	<i>0.030</i>	1,436
Jan-96	26,820	<i>194</i>	4,611	<i>0.030</i>	2,188
Feb-96	261,756	<i>206</i>	17,427	<i>0.015</i>	10,676
Mar-96	293,881	<i>194</i>	18,645	<i>0.015</i>	11,986
Apr-96	161,218	<i>206</i>	13,134	<i>0.015</i>	6,575
May-96	232,963	<i>194</i>	16,281	<i>0.015</i>	9,501
Jun-96	35,974	<i>206</i>	5,473	<i>0.030</i>	2,934
Jul-96	10,405	<i>194</i>	2,653	<i>0.030</i>	849
Aug-96	17,123	<i>206</i>	3,549	<i>0.030</i>	1,397
Sep-96	17,072	<i>194</i>	3,542	<i>0.030</i>	1,393
Oct-96	28,071	<i>206</i>	4,735	<i>0.030</i>	2,290
Nov-96	23,348	<i>194</i>	4,252	<i>0.030</i>	1,904
Dec-96	284,328	<i>206</i>	18,289	<i>0.015</i>	11,596
Jan-97	803,690	<i>194</i>	33,539	<i>0.015</i>	32,778
Feb-97	450,657	<i>206</i>	23,929	<i>0.015</i>	18,380
Mar-97	150,175	<i>194</i>	12,601	<i>0.015</i>	6,125
Apr-97	86,663	<i>206</i>	9,142	<i>0.030</i>	7,069
May-97	58,552	<i>194</i>	7,272	<i>0.030</i>	4,776
Jun-97	15,993	<i>206</i>	3,410	<i>0.030</i>	1,305
Jul-97	17,809	<i>194</i>	3,631	<i>0.030</i>	1,453
Aug-97	17,629	<i>206</i>	3,609	<i>0.030</i>	1,438
Sep-97	16,941	<i>194</i>	3,526	<i>0.030</i>	1,382

italicized = estimated

Table A16: Core Data Set
Mud Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	7,715	843	8,842	<i>0.67</i>	14,147
Nov-76	9,845	1,296	17,346	<i>1.04</i>	27,754
Dec-76	3,815	1,749	9,071	<i>1.40</i>	14,514
Jan-77	8,711	2,202	26,077	<i>1.76</i>	41,724
Feb-77	7,494	2,439	24,849	<i>1.95</i>	39,758
Mar-77	1,599	3,343	7,267	<i>2.67</i>	11,627
Apr-77	468	3,431	2,183	<i>2.74</i>	3,493
May-77	144	3,347	655	<i>2.68</i>	1,048
Jun-77	92	2,515	315	<i>2.01</i>	503
Jul-77	46	2,898	181	<i>2.32</i>	290
Aug-77	116	2,656	419	<i>2.12</i>	670
Sep-77	87	2,415	286	<i>1.93</i>	457
Oct-77	100	2,174	296	<i>1.74</i>	473
Nov-77	133	1,932	349	<i>1.55</i>	559
Dec-77	501	1,976	1,346	<i>1.58</i>	2,153
Jan-78	16,390	2,020	45,010	<i>1.62</i>	72,016
Feb-78	26,719	2,064	74,974	<i>1.65</i>	119,958
Mar-78	13,520	2,107	38,728	<i>1.69</i>	61,964
Apr-78	4,388	2,151	12,832	<i>1.72</i>	20,531
May-78	1,848	2,195	5,515	<i>1.76</i>	8,823
Jun-78	535	2,239	1,628	<i>1.79</i>	2,606
Jul-78	516	2,239	1,571	<i>1.79</i>	2,513
Aug-78	623	2,327	1,971	<i>1.86</i>	3,153
Sep-78	1,393	2,371	4,490	<i>1.90</i>	7,184
Oct-78	1,534	2,414	5,034	<i>1.93</i>	8,055
Nov-78	4,414	2,458	14,750	<i>1.97</i>	23,600
Dec-78	3,470	2,502	11,803	<i>2.00</i>	18,885
Jan-79	12,329	2,546	42,674	<i>2.04</i>	68,279
Feb-79	17,261	1,967	46,158	<i>1.57</i>	73,853
Mar-79	25,411	2,381	82,255	<i>1.90</i>	131,607
Apr-79	5,654	1,518	11,668	<i>1.21</i>	18,669
May-79	1,708	2,243	5,208	<i>1.79</i>	8,333
Jun-79	240	2,684	876	<i>2.15</i>	1,401
Jul-79	702	1,967	1,877	<i>1.57</i>	3,004
Aug-79	1,055	1,573	2,256	<i>1.26</i>	3,610
Sep-79	658	1,718	1,537	<i>1.37</i>	2,459
Oct-79	1,880	2,056	5,255	<i>1.64</i>	8,408
Nov-79	5,380	1,366	9,991	<i>1.09</i>	15,986
Dec-79	3,421	1,822	8,474	<i>1.46</i>	13,558
Jan-80	19,584	2,084	55,485	<i>1.67</i>	88,777
Feb-80	30,384	994	41,059	<i>0.80</i>	65,695
Mar-80	15,753	828	17,733	<i>0.66</i>	28,372
Apr-80	6,456	1,932	16,957	<i>1.55</i>	27,131

italicized = estimated

Table A16: Core Data Set
Mud Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
May-80	1,774	2,001	4,826	<i>1.60</i>	7,721
Jun-80	425	2,208	1,276	<i>1.77</i>	2,041
Jul-80	555	2,250	1,698	<i>1.80</i>	2,716
Aug-80	541	2,293	1,686	<i>1.83</i>	2,698
Sep-80	1,456	2,335	4,622	<i>1.87</i>	7,395
Oct-80	2,700	2,378	8,729	<i>1.90</i>	13,966
Nov-80	8,184	2,420	26,925	<i>1.94</i>	43,080
Dec-80	6,287	2,463	21,052	<i>1.97</i>	33,683
Jan-81	15,863	2,505	54,022	<i>2.00</i>	86,436
Feb-81	16,971	2,548	58,788	<i>2.04</i>	94,060
Mar-81	15,556	2,590	54,774	<i>2.07</i>	87,639
Apr-81	2,536	2,452	8,454	<i>1.96</i>	13,526
May-81	1,247	2,313	3,921	<i>1.85</i>	6,274
Jun-81	283	2,175	837	<i>1.74</i>	1,339
Jul-81	404	2,299	1,263	<i>1.84</i>	2,020
Aug-81	685	2,422	2,256	<i>1.94</i>	3,609
Sep-81	581	2,546	2,011	<i>2.04</i>	3,218
Oct-81	1,571	2,670	5,703	<i>2.14</i>	9,124
Nov-81	5,652	1,450	11,142	<i>1.16</i>	17,827
Dec-81	4,429	2,010	12,103	<i>1.61</i>	19,364
Jan-82	5,546	2,180	16,437	<i>1.74</i>	26,299
Feb-82	11,347	2,710	41,805	<i>2.17</i>	66,888
Mar-82	14,958	2,850	57,956	<i>2.28</i>	92,729
Apr-82	3,555	1,547	7,477	<i>1.24</i>	11,963
May-82	1,839	243	608	<i>0.19</i>	972
Jun-82	639	1,110	964	<i>0.89</i>	1,543
Jul-82	822	1,760	1,967	<i>1.41</i>	3,147
Aug-82	829	1,570	1,769	<i>1.26</i>	2,831
Sep-82	1,476	940	1,886	<i>0.75</i>	3,018
Oct-82	3,320	754	3,403	<i>0.60</i>	5,445
Nov-82	13,609	677	12,525	<i>0.54</i>	20,041
Dec-82	17,626	599	14,354	<i>0.48</i>	22,966
Jan-83	25,725	658	23,012	<i>0.53</i>	36,820
Feb-83	29,075	718	28,381	<i>0.57</i>	45,409
Mar-83	17,640	777	18,634	<i>0.62</i>	29,814
Apr-83	6,206	836	7,053	<i>0.67</i>	11,285
May-83	2,379	306	990	<i>0.24</i>	1,583
Jun-83	682	356	330	<i>0.28</i>	528
Jul-83	1,100	1,500	2,243	<i>1.20</i>	3,589
Aug-83	1,217	862	1,426	<i>0.69</i>	2,282
Sep-83	1,869	1,396	3,547	<i>1.12</i>	5,675
Oct-83	6,150	1,203	10,058	<i>0.96</i>	16,093
Nov-83	9,214	1,010	12,652	<i>0.81</i>	20,243

italicized = estimated

Table A16: Core Data Set
Mud Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Dec-83	7,076	817	7,859	<i>0.65</i>	12,575
Jan-84	23,197	624	19,679	<i>0.50</i>	31,486
Feb-84	23,054	1,380	43,252	<i>1.10</i>	69,203
Mar-84	12,775	2,135	37,080	<i>1.71</i>	59,328
Apr-84	4,550	2,891	17,883	<i>2.31</i>	28,613
May-84	1,419	3,657	7,055	<i>2.93</i>	11,288
Jun-84	469	2,615	1,667	<i>2.09</i>	2,668
Jul-84	580	2,208	1,741	<i>1.77</i>	2,786
Aug-84	748	1,725	1,754	<i>1.38</i>	2,807
Sep-84	815	2,498	2,768	<i>2.00</i>	4,428
Oct-84	3,282	1,049	4,681	<i>0.84</i>	7,489
Nov-84	7,252	1,608	15,853	<i>1.29</i>	25,365
Dec-84	7,294	2,167	21,488	<i>1.73</i>	34,381
Jan-85	12,048	2,634	43,143	<i>2.11</i>	69,029
Feb-85	14,399	3,050	59,705	<i>2.44</i>	95,528
Mar-85	14,615	3,105	61,694	<i>2.48</i>	98,710
Apr-85	9,992	2,084	28,309	<i>1.67</i>	45,295
May-85	6,758	3,222	29,602	<i>2.58</i>	47,363
Jun-85	4,630	1,823	11,475	<i>1.46</i>	18,360
Jul-85	5,370	1,530	11,170	<i>1.22</i>	17,872
Aug-85	3,560	1,403	6,790	<i>1.12</i>	10,864
Sep-85	2,970	1,364	5,507	<i>1.09</i>	8,812
Oct-85	2,380	1,209	3,912	1.47	9,534
Nov-85	2,420	2,220	7,302	2.19	14,404
Dec-85	6,800	1,923	17,773	2.54	46,960
Jan-86	5,890	2,038	16,321	3.53	56,554
Feb-86	9,080	1,438	17,756	2.25	55,493
Mar-86	20,630	1,034	29,012	1.27	71,152
Apr-86	13,650	1,896	35,186	2.57	95,228
May-86	6,700	2,310	21,042	3.28	59,822
Jun-86	7,720	1,762	18,491	3.33	69,850
Jul-86	5,700	1,676	12,991	3.38	52,454
Aug-86	4,830	1,512	9,927	2.87	37,745
Sep-86	776	1,377	1,452	2.07	4,366
Oct-86	1,020	1,026	1,423	1.07	2,968
Nov-86	1,480	2,693	5,419	1.94	7,795
Dec-86	1,520	2,383	4,925	3.11	12,848
Jan-87	2,980	2,232	9,043	3.11	25,237
Feb-87	7,040	1,957	18,727	3.73	71,396
Mar-87	8,590	2,290	26,746	3.49	81,570
Apr-87	4,660	2,160	13,685	4.11	52,113
May-87	1,670	2,221	5,042	3.36	15,278
Jun-87	2,110	1,757	5,039	3.74	21,466

italicized = estimated

Table A16: Core Data Set
Mud Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jul-87	3,680	1,460	7,305	2.99	29,962
Aug-87	6,160	1,567	13,121	3.29	55,095
Sep-87	873	1,100	1,306	2.40	5,699
Oct-87	1,990	973	2,632	0.98	5,296
Nov-87	4,080	1,270	7,044	1.25	13,880
Dec-87	1,770	2,112	5,083	2.29	11,013
Jan-88	5,110	1,925	13,373	2.38	33,050
Feb-88	4,770	1,810	11,736	2.49	32,349
Mar-88	7,920	1,875	20,184	2.57	55,244
Apr-88	3,010	1,672	6,844	2.17	17,768
May-88	3,170	1,654	7,127	2.71	23,337
Jun-88	4,090	1,660	9,231	3.16	35,187
Jul-88	1,730	1,482	3,487	2.46	11,588
Aug-88	532	1,973	1,427	3.41	4,937
Sep-88	282	4,016	1,540	3.36	2,574
Oct-88	1,380	823	1,545	0.78	2,943
Nov-88	1,130	2,018	3,100	1.73	5,326
Dec-88	3,520	1,349	6,455	1.34	12,812
Jan-89	2,870	2,088	8,148	2.32	18,126
Feb-89	2,490	1,722	5,830	2.20	14,895
Mar-89	1,730	2,402	5,649	2.80	13,149
Apr-89	3,180	2,047	8,848	3.01	26,036
May-89	1,240	1,807	3,046	2.81	9,483
Jun-89	463	2,346	1,476	2.73	3,431
Jul-89	1,110	1,352	2,040	1.83	5,532
Aug-89	1,050	2,081	2,970	2.84	8,101
Sep-89	1,090	928	1,376	1.13	3,350
Oct-89	3,510	621	2,961	0.76	7,238
Nov-89	3,570	982	4,765	0.97	9,430
Dec-89	4,430	1,241	7,474	1.21	14,522
Jan-90	3,190	1,888	8,188	1.92	16,691
Feb-90	2,200	2,232	6,677	2.96	17,706
Mar-90	1,720	2,253	5,269	3.64	17,024
Apr-90	1,420	2,782	5,370	3.59	13,861
May-90	527	3,025	2,167	4.33	6,199
Jun-90	651	2,504	2,216	4.13	7,304
Jul-90	669	2,212	2,012	4.95	9,005
Aug-90	370	1,829	920	4.25	4,271
Sep-90	159	1,742	376	3.18	1,376
Oct-90	428	2,095	1,219	0.77	890
Nov-90	448	2,179	1,327	2.38	2,893
Dec-90	361	2,544	1,249	3.85	3,779
Jan-91	379	2,175	1,120	3.32	3,421

italicized = estimated

Table A16: Core Data Set
Mud Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Feb-91	387	2,119	1,115	4.53	4,761
Mar-91	1,800	2,273	5,563	3.74	18,304
Apr-91	2,050	2,448	6,824	3.78	21,042
May-91	300	4,628	1,888	6.09	4,968
Jun-91	549	1,846	1,378	5.43	8,107
Jul-91	2,370	2,344	7,552	5.52	35,580
Aug-91	2,410	2,187	7,165	4.29	28,127
Sep-91	1,280	2,335	4,063	3.74	13,008
Oct-91	375	589	300	0.46	469
Nov-91	455	1,571	972	1.61	1,989
Dec-91	497	2,328	1,573	2.55	3,446
Jan-92	1,410	1,936	3,710	2.02	7,744
Feb-92	4,740	1,519	9,788	1.88	24,165
Mar-92	3,400	1,814	8,385	2.34	21,632
Apr-92	1,150	2,222	3,474	3.60	11,257
May-92	108	4,817	707	3.23	947
Jun-92	1,130	2,675	4,109	4.65	14,287
Jul-92	1,110	2,511	3,788	6.28	18,954
Aug-92	667	2,426	2,200	4.90	8,887
Sep-92	276	2,009	754	2.44	1,831
Oct-92	206	1,170	328	0.97	542
Nov-92	587	2,588	2,066	2.92	4,666
Dec-92	1,380	2,374	4,455	3.78	14,174
Jan-93	12,900	905	15,870	1.52	53,314
Feb-93	9,830	1,090	14,572	1.58	42,230
Mar-93	6,390	1,236	10,737	2.46	42,741
Apr-93	3,980	1,718	9,296	2.82	30,474
May-93	877	2,091	2,494	3.26	7,762
Jun-93	1,450	1,451	2,860	2.39	9,413
Jul-93	731	1,622	1,612	1.83	3,637
Aug-93	589	1,024	820	1.61	2,574
Sep-93	415	1,114	628	1.45	1,636
Oct-93	3,750	588	2,998	0.86	8,777
Nov-93	5,480	734	5,466	0.81	12,006
Dec-93	6,710	922	8,407	0.78	14,276
Jan-94	6,350	1,180	10,189	1.40	24,172
Feb-94	6,920	1,286	12,103	1.49	27,988
Mar-94	3,680	1,705	8,532	1.99	19,862
Apr-94	1,150	2,406	3,762	3.01	9,412
May-94	511	3,222	2,238	3.37	4,675
Jun-94	732	3,111	3,096	3.74	7,447
Jul-94	456	2,475	1,534	2.55	3,162
Aug-94	207	2,256	635	2.07	1,163

italicized = estimated

Table A16: Core Data Set
Mud Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Sep-94	640	823	716	1.15	2,001
Oct-94	2,260	875	2,689	0.85	5,208
Nov-94	2,980	<i>1,115</i>	4,515	1.11	8,978
Dec-94	4,160	<i>1,190</i>	6,728	1.14	12,895
Jan-95	15,920	<i>1,020</i>	22,086	1.03	44,693
Feb-95	7,150	<i>1,294</i>	12,576	1.80	34,994
Mar-95	22,080	<i>1,225</i>	36,768	1.81	108,764
Apr-95	6,680	<i>1,477</i>	13,413	1.89	34,250
May-95	2,690	929	3,396	1.56	11,410
Jun-95	1,790	886	2,155	1.09	5,281
Jul-95	2,210	889	2,670	0.89	5,363
Aug-95	1,290	808	1,416	1.01	3,529
Sep-95	1,050	689	983	1.16	3,312
Oct-95	1,338	<i>600</i>	1,091	0.62	2,259
Nov-95	4,301	778	4,550	0.77	8,984
Dec-95	7,474	929	9,436	0.91	18,586
Jan-96	6,052	<i>1,189</i>	9,782	1.29	21,266
Feb-96	18,281	870	21,619	1.12	55,672
Mar-96	12,041	<i>1,212</i>	19,837	1.66	54,265
Apr-96	2,766	<i>1,931</i>	7,261	2.85	21,402
May-96	2,696	<i>1,225</i>	4,491	1.49	10,949
Jun-96	1,366	<i>1,370</i>	2,546	1.40	5,196
Jul-96	614	<i>1,522</i>	1,272	1.95	3,250
Aug-96	409	<i>1,080</i>	600	1.23	1,364
Sep-96	1,012	<i>1,945</i>	2,677	3.06	8,416
Oct-96	5,975	1,199	9,742	2.98	48,361
Nov-96	10,748	1,060	15,487	1.85	53,951
Dec-96	18,745	978	24,935	1.63	83,248
Jan-97	33,503	959	43,688	1.74	158,276
Feb-97	20,588	1,437	40,214	3.08	172,597
Mar-97	10,918	2,185	32,440	4.63	137,409
Apr-97	6,550	2,772	24,686	5.93	105,519
May-97	7,085	1,995	19,216	5.20	100,177
Jun-97	4,906	2,331	15,546	5.70	76,034
Jul-97	5,471	1,945	14,466	5.84	86,875
Aug-97	4,335	1,778	10,476	5.40	63,647
Sep-97	2,477	1,154	3,885	3.63	24,412

italicized = estimated

Table A17: Core Data Set
Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Oct-76	8,892	947	11,448	<i>0.95</i>	22,896
Nov-76	7,458	1,320	13,384	<i>1.32</i>	26,767
Dec-76	3,289	1,706	7,628	<i>1.71</i>	15,256
Jan-77	7,188	2,092	20,443	<i>2.09</i>	40,886
Feb-77	5,821	2,379	18,827	<i>2.38</i>	37,653
Mar-77	5,671	1,701	13,114	<i>1.70</i>	26,228
Apr-77	2,884	1,688	6,618	<i>1.69</i>	13,237
May-77	2,368	1,541	4,961	<i>1.54</i>	9,922
Jun-77	1,299	1,505	2,658	<i>1.51</i>	5,316
Jul-77	2,099	1,236	3,527	<i>1.24</i>	7,054
Aug-77	3,652	855	4,245	<i>0.86</i>	8,490
Sep-77	855	1,425	1,656	<i>1.43</i>	3,313
Oct-77	413	1,766	992	<i>1.77</i>	1,983
Nov-77	595	2,046	1,655	<i>2.05</i>	3,310
Dec-77	1,765	2,077	4,984	<i>2.08</i>	9,968
Jan-78	7,553	2,109	21,656	<i>2.11</i>	43,312
Feb-78	17,350	2,140	50,477	<i>2.14</i>	100,954
Mar-78	18,520	1,940	48,845	<i>1.94</i>	97,690
Apr-78	16,250	1,740	38,440	<i>1.74</i>	76,880
May-78	16,800	1,541	35,196	<i>1.54</i>	70,392
Jun-78	17,840	1,341	32,524	<i>1.34</i>	65,048
Jul-78	12,890	1,141	19,995	<i>1.14</i>	39,990
Aug-78	12,460	941	15,940	<i>0.94</i>	31,880
Sep-78	11,610	1,111	17,536	<i>1.11</i>	35,072
Oct-78	3,130	1,281	5,451	<i>1.28</i>	10,902
Nov-78	3,344	1,450	6,592	<i>1.45</i>	13,184
Dec-78	2,991	1,620	6,587	<i>1.62</i>	13,175
Jan-79	5,117	1,790	12,452	<i>1.79</i>	24,904
Feb-79	8,622	1,607	18,837	<i>1.61</i>	37,673
Mar-79	22,940	1,423	44,379	<i>1.42</i>	88,758
Apr-79	17,770	1,240	29,956	<i>1.24</i>	59,913
May-79	11,940	1,056	17,141	<i>1.06</i>	34,283
Jun-79	11,070	873	13,138	<i>0.87</i>	26,277
Jul-79	11,830	689	11,081	<i>0.69</i>	22,162
Aug-79	13,360	929	16,873	<i>0.93</i>	33,747
Sep-79	8,551	1,169	13,590	<i>1.17</i>	27,179
Oct-79	3,836	1,410	7,353	<i>1.41</i>	14,706
Nov-79	4,076	1,650	9,143	<i>1.65</i>	18,286
Dec-79	2,949	1,890	7,577	<i>1.89</i>	15,155
Jan-80	9,025	1,790	21,962	<i>1.79</i>	43,925
Feb-80	19,730	1,606	43,078	<i>1.61</i>	86,155
Mar-80	21,580	1,421	41,689	<i>1.42</i>	83,379
Apr-80	23,910	1,237	40,209	<i>1.24</i>	80,419

italicized = estimated

Table A17: Core Data Set
Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
May-80	16,130	1,052	23,069	<i>1.05</i>	46,138
Jun-80	14,150	868	16,698	<i>0.87</i>	33,395
Jul-80	13,880	683	12,888	<i>0.68</i>	25,776
Aug-80	10,810	795	11,683	<i>0.80</i>	23,367
Sep-80	12,130	907	14,957	<i>0.91</i>	29,914
Oct-80	5,510	1,018	7,626	<i>1.02</i>	15,251
Nov-80	6,200	1,130	9,525	<i>1.13</i>	19,049
Dec-80	5,420	1,410	10,390	<i>1.41</i>	20,779
Jan-81	7,310	1,690	16,795	<i>1.69</i>	33,590
Feb-81	11,020	1,970	29,514	<i>1.97</i>	59,028
Mar-81	21,310	1,756	50,873	<i>1.76</i>	101,746
Apr-81	13,060	1,542	27,378	<i>1.54</i>	54,757
May-81	11,340	1,328	20,473	<i>1.33</i>	40,947
Jun-81	9,440	1,114	14,297	<i>1.11</i>	28,593
Jul-81	10,110	900	12,370	<i>0.90</i>	24,740
Aug-81	13,690	1,063	19,784	<i>1.06</i>	39,568
Sep-81	4,840	1,227	8,074	<i>1.23</i>	16,147
Oct-81	3,207	1,390	6,060	<i>1.39</i>	12,121
Nov-81	4,282	1,400	8,150	<i>1.40</i>	16,300
Dec-81	3,818	1,730	8,980	<i>1.73</i>	17,959
Jan-82	7,164	2,110	20,550	<i>2.11</i>	41,101
Feb-82	7,368	2,545	25,493	<i>2.55</i>	50,985
Mar-82	20,491	1,260	35,100	<i>1.26</i>	70,201
Apr-82	13,166	2,050	36,693	<i>2.05</i>	73,387
May-82	16,718	1,317	29,933	<i>1.32</i>	59,866
Jun-82	21,310	583	16,890	<i>0.58</i>	33,780
Jul-82	20,560	680	19,007	<i>0.68</i>	38,014
Aug-82	16,571	559	12,593	<i>0.56</i>	25,187
Sep-82	12,299	672	11,236	<i>0.67</i>	22,472
Oct-82	6,775	946	8,713	<i>0.95</i>	17,426
Nov-82	10,310	1,008	14,129	<i>1.01</i>	28,257
Dec-82	15,195	1,070	22,104	<i>1.07</i>	44,207
Jan-83	11,855	1,349	21,742	<i>1.35</i>	43,483
Feb-83	18,880	1,628	41,786	<i>1.63</i>	83,573
Mar-83	24,164	1,450	47,634	<i>1.45</i>	95,268
Apr-83	22,986	1,268	39,624	<i>1.27</i>	79,249
May-83	21,623	648	19,049	<i>0.65</i>	38,098
Jun-83	22,734	604	18,668	<i>0.60</i>	37,336
Jul-83	27,492	136	5,083	<i>0.14</i>	10,166
Aug-83	24,337	564	18,661	<i>0.56</i>	37,321
Sep-83	15,574	586	12,407	<i>0.59</i>	24,815
Oct-83	12,550	1,050	17,915	<i>1.05</i>	35,830
Nov-83	6,980	1,513	14,357	<i>1.51</i>	28,715

italicized = estimated

Table A17: Core Data Set
Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Dec-83	6,100	1,976	16,387	<i>1.98</i>	32,774
Jan-84	10,690	2,440	35,461	<i>2.44</i>	70,921
Feb-84	14,970	2,012	40,948	<i>2.01</i>	81,895
Mar-84	17,500	1,583	37,662	<i>1.58</i>	75,323
Apr-84	16,850	1,155	26,458	<i>1.16</i>	52,916
May-84	12,900	726	12,732	<i>0.73</i>	25,465
Jun-84	15,630	376	7,990	<i>0.38</i>	15,979
Jul-84	14,510	1,023	20,180	<i>1.02</i>	40,360
Aug-84	14,960	950	19,321	<i>0.95</i>	38,642
Sep-84	6,790	891	8,225	<i>0.89</i>	16,450
Oct-84	6,698	878	7,995	<i>0.88</i>	15,990
Nov-84	5,494	1,511	11,286	<i>1.51</i>	22,572
Dec-84	6,288	1,505	12,866	<i>1.51</i>	25,731
Jan-85	5,552	1,848	13,949	<i>1.85</i>	27,897
Feb-85	9,350	1,366	17,364	<i>1.37</i>	34,727
Mar-85	20,021	1,525	41,508	<i>1.53</i>	83,017
Apr-85	20,342	1,366	37,777	<i>1.37</i>	75,553
May-85	20,529	1,003	27,993	1.40	78,146
Jun-85	14,438	941	18,470	1.10	43,183
Jul-85	14,192	1,100	21,223	0.97	37,430
Aug-85	17,050	746	17,292	0.80	36,855
Sep-85	9,735	805	10,654	0.68	17,999
Oct-85	11,030	875	13,116	1.30	38,988
Nov-85	7,780	1,253	13,253	1.62	34,303
Dec-85	5,590	1,682	12,780	2.25	34,198
Jan-86	5,930	1,994	16,079	3.57	57,508
Feb-86	16,150	1,981	43,502	3.10	136,127
Mar-86	23,090	1,604	50,363	2.60	163,232
Apr-86	24,920	1,303	44,139	1.10	74,533
May-86	19,810	853	22,978	0.43	23,161
Jun-86	17,560	613	14,632	0.59	28,011
Jul-86	23,390	762	24,239	0.85	53,976
Aug-86	25,300	857	29,476	0.92	63,287
Sep-86	17,190	800	18,693	1.13	52,582
Oct-86	11,510	888	13,901	1.02	31,936
Nov-86	12,870	1,036	18,121	1.30	45,492
Dec-86	9,570	1,486	19,332	2.00	52,042
Jan-87	9,070	1,778	21,927	2.85	70,285
Feb-87	13,660	1,636	30,375	3.50	129,995
Mar-87	28,640	1,540	59,971	2.00	155,660
Apr-87	16,860	1,386	31,758	2.10	96,269
May-87	21,800	1,141	33,810	1.40	82,984
Jun-87	20,180	1,127	30,932	1.60	87,791

italicized = estimated

Table A17: Core Data Set
Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Jul-87	19,190	1,087	28,346	1.58	82,441
Aug-87	15,630	918	19,517	0.90	38,248
Sep-87	13,080	1,069	19,016	1.39	49,435
Oct-87	11,490	1,087	16,977	1.13	35,303
Nov-87	13,520	1,369	25,159	1.45	53,303
Dec-87	6,860	2,007	18,720	3.10	57,822
Jan-88	9,290	2,167	27,369	3.40	85,882
Feb-88	13,770	1,869	34,984	3.00	112,322
Mar-88	24,580	1,467	49,033	2.20	147,033
Apr-88	18,680	1,476	37,484	2.10	106,661
May-88	15,810	1,268	27,244	1.73	74,153
Jun-88	18,940	1,181	30,421	1.72	88,576
Jul-88	19,530	1,338	35,537	2.00	106,204
Aug-88	23,260	1,186	37,511	1.58	99,609
Sep-88	16,270	1,161	25,688	1.48	65,472
Oct-88	15,600	958	20,320	1.00	42,310
Nov-88	10,650	1,351	19,559	1.55	44,884
Dec-88	9,690	1,525	20,092	2.15	56,646
Jan-89	8,580	2,016	23,512	3.13	73,098
Feb-89	13,230	1,735	31,204	2.53	91,130
Mar-89	18,000	1,680	41,102	2.68	131,165
Apr-89	18,690	1,498	38,054	2.18	110,529
May-89	17,040	1,264	29,280	2.22	102,857
Jun-89	19,930	1,258	34,094	2.20	119,217
Jul-89	20,540	1,104	30,831	1.85	103,319
Aug-89	22,520	961	29,415	1.58	96,440
Sep-89	15,670	999	21,277	1.56	66,466
Oct-89	15,700	985	21,020	1.30	55,495
Nov-89	16,230	1,086	23,968	1.45	63,988
Dec-89	11,900	1,516	24,528	2.07	66,869
Jan-90	10,830	1,938	28,540	2.83	83,187
Feb-90	14,900	1,897	38,428	2.67	108,035
Mar-90	18,960	1,846	47,594	2.62	135,067
Apr-90	13,850	1,742	32,798	2.45	92,262
May-90	12,780	1,608	27,934	2.48	86,177
Jun-90	10,770	1,642	24,035	3.18	92,976
Jul-90	16,000	1,165	25,341	2.25	97,884
Aug-90	18,210	969	23,986	1.54	76,002
Sep-90	12,110	844	13,896	1.39	45,769
Oct-90	8,650	834	9,811	0.67	15,758
Nov-90	8,580	1,058	12,344	1.05	24,495
Dec-90	3,900	2,197	11,647	3.15	33,403
Jan-91	3,730	2,518	12,766	3.62	36,714

italicized = estimated

Table A17: Core Data Set
Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Feb-91	4,630	2,252	14,173	3.53	44,376
Mar-91	18,370	1,601	39,986	2.08	103,892
Apr-91	11,680	1,886	29,951	2.95	93,686
May-91	7,730	1,646	17,301	2.35	49,296
Jun-91	6,200	1,455	12,261	2.38	40,070
Jul-91	6,350	905	7,809	0.72	12,456
Aug-91	6,690	803	7,303	0.58	10,634
Sep-91	2,890	1,443	5,668	1.40	11,001
Oct-91	2,760	1,274	4,779	0.86	6,424
Nov-91	6,090	1,368	11,324	1.32	21,816
Dec-91	5,550	1,700	12,828	1.80	27,163
Jan-92	5,550	2,251	16,982	3.52	53,118
Feb-92	7,590	2,049	21,146	3.33	68,619
Mar-92	14,200	1,709	32,986	2.60	100,385
Apr-92	9,810	1,878	25,040	2.67	71,129
May-92	4,620	1,777	11,162	2.22	27,887
Jun-92	4,290	1,437	8,382	2.59	30,153
Jul-92	3,790	980	5,048	0.77	7,914
Aug-92	3,510	920	4,389	0.47	4,486
Sep-92	2,350	1,087	3,473	0.69	4,377
Oct-92	2,540	1,185	4,094	0.73	5,055
Nov-92	3,880	1,595	8,411	2.10	22,154
Dec-92	3,940	1,877	10,055	2.27	24,318
Jan-93	10,260	1,917	26,745	3.44	96,035
Feb-93	10,670	2,147	31,144	4.31	125,099
Mar-93	14,780	1,775	35,666	2.89	116,240
Apr-93	16,400	1,659	36,992	2.44	108,714
May-93	12,990	1,513	26,712	2.28	80,353
Jun-93	12,140	1,478	24,400	2.74	90,361
Jul-93	14,050	1,381	26,387	2.41	92,220
Aug-93	17,640	1,114	26,726	2.20	105,519
Sep-93	9,330	1,054	13,363	1.45	36,847
Oct-93	9,910	945	12,731	1.17	31,639
Nov-93	12,500	1,144	19,441	1.60	54,295
Dec-93	13,850	1,344	25,308	1.99	74,751
Jan-94	10,920	1,743	25,869	2.77	82,245
Feb-94	18,120	1,725	42,502	2.67	131,669
Mar-94	22,040	1,721	51,572	2.77	165,757
Apr-94	12,500	1,893	32,171	2.54	86,243
May-94	10,160	1,915	26,448	3.28	90,610
Jun-94	8,900	1,901	22,995	3.56	86,149
Jul-94	11,110	1,658	25,046	2.60	78,541
Aug-94	10,040	1,648	22,495	2.70	73,707

italicized = estimated

Table A17: Core Data Set
Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
Sep-94	6,910	1,390	13,054	1.85	34,758
Oct-94	5,929	1,280	10,319	1.08	17,331
Nov-94	7,555	1,670	17,149	1.98	40,572
Dec-94	8,414	1,673	19,140	2.04	46,670
Jan-95	15,957	1,627	35,287	2.40	104,130
Feb-95	15,279	2,256	46,855	3.75	155,789
Mar-95	23,887	1,881	61,096	3.07	199,178
Apr-95	21,859	1,677	49,848	2.68	158,985
May-95	22,884	1,162	36,138	1.83	113,554
Jun-95	11,466	1,284	20,011	2.12	66,092
Jul-95	21,357	1,208	35,073	1.98	114,687
Aug-95	22,352	1,118	33,980	1.88	113,955
Sep-95	16,570	1,106	24,916	1.60	72,086
Oct-95	12,483	860	14,601	0.91	30,887
Nov-95	11,593	1,135	17,893	1.54	48,656
Dec-95	14,559	1,361	26,945	1.98	78,259
Jan-96	11,569	1,751	27,542	2.48	78,155
Feb-96	28,785	1,511	59,112	2.12	165,784
Mar-96	31,458	1,496	63,995	2.07	176,992
Apr-96	17,224	1,416	33,157	2.02	94,517
May-96	14,311	1,372	26,695	2.32	90,097
Jun-96	15,999	1,646	35,798	2.52	109,477
Jul-96	18,035	1,445	35,427	2.58	126,368
Aug-96	20,665	1,204	33,835	1.82	102,262
Sep-96	12,915	993	17,438	1.44	50,509
Oct-96	7,591	808	8,337	0.66	13,657
Nov-96	12,548	835	14,247	0.89	30,497
Dec-96	13,139	1,011	18,056	1.10	39,299
Jan-97	26,158	1,027	36,538	1.23	87,560
Feb-97	19,749	1,079	28,961	1.23	66,136
Mar-97	21,714	838	24,749	0.64	37,982
Apr-97	9,449	1,124	14,436	0.87	22,288
May-97	9,140	927	11,516	0.71	17,594
Jun-97	9,124	878	10,896	0.69	17,200
Jul-97	9,939	700	9,453	0.55	14,809
Aug-97	11,686	625	9,923	0.51	16,125
Sep-97	6,716	693	6,331	0.56	10,272

italicized = estimated

Table A17: Core Data Set

Salt Slough

Date	Flow (acre-feet)	TDS (mg/L)	Salt Load (tons)	Boron Concentration (mg/L)	Boron Load (tons)
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